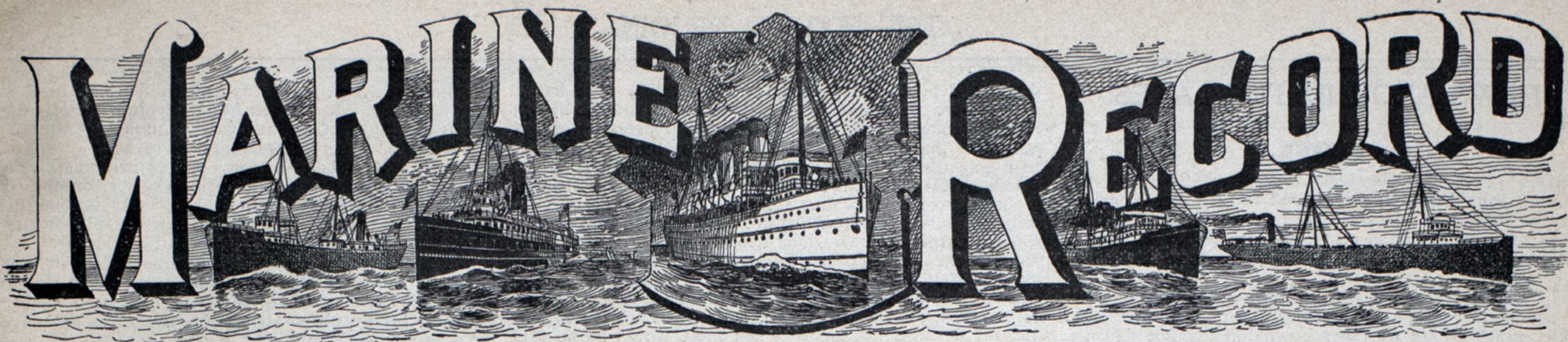


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IMPROVING LAKE WATERWAYS.

An undertaking of vast importance to the commercial interests of the United States, which has been in process of construction during the past four years, has just been completed by the United States Government. This is the 20 and 21-foot ship canal through the connecting waters of the great lakes between Chicago, Buffalo and Duluth, the construction of which called for an expenditure of \$3,340,000. The improved channel will add greatly to the shipping facilities. It will enable boats to load to a greater draft. Larger loads mean cheaper freight rates. Cheaper freight rates will benefit producer and consumer alike. Therefore it can readily be seen that the improvement in question will be of incalculable benefit to the people of the United States generally.

The project for obtaining a navigable channel of 16 feet depth between Lakes Superior and Huron had been barely completed in 1881, by the construction of the Weitzel lock at St. Mary's Falls Canal, when the demands of commerce so enormously increased that the work of obtaining a depth of 20 feet throughout the connecting waters of the great lakes was undertaken with the full sanction of both legislative and executive authority.

An important improvement was the construction of Hay Lake channel, St. Mary's River, which was completed in 1894, at a cost of \$2,659,115. Before improvements were commenced the channel through Hay Lake was restricted in depth at Sugar Island rapids and at Middle Neebish. At these two places a maximum draft of but 8 or 9 feet could be carried by vessels if a very irregular course were taken, and practically vessels drawing more than 6 feet of water would not attempt the passage. In addition to the places above mentioned there were some shoals in Hay Lake requiring removal to make the channel available for vessels navigating St. Mary's River. The original project of October 27, 1882, provided for a channel 300 feet wide and 17 feet deep, leaving the old channel, which was around east and north of Sugar Island, at Sugar Island rapids, about 2 1-2 miles below St. Mary's Falls Canal, through these rapids into Hay Lake, and then by the way of Middle Neebish, rejoining the old channel at the foot of Sugar Island, thus saving a distance of eleven miles and providing a route navigable at night by aid of range lights, a condition impracticable with the old channel, except by the use of many lights. The estimated cost was \$2,127,292. The above project was subsequently modified to increase the navigable depth to 20 feet, the estimated cost being \$2,659,115. The Hay Lake channel was informally opened on June 7, 1894, when the steamship North West, of the Northern Steamship Company, followed closely by the steamer J. H. Wade, passed up on her first trip.

Still another important link in the chain of improvements required was widening and deepening of the Lime Kiln Crossing, Detroit River, to 20 feet deep and 440 feet wide. This work was completed November 1, 1890, at a cost of \$704,257.34.

An available depth of 20 feet having been provided for at St. Mary's Falls Canal, Hay Lake channel, and at Lime Kiln Crossing, by previous acts of Congress, the remaining shallows in the connecting waters of the Great Lakes, with the exception of some shoals in Detroit River, between the city of Detroit and Lake Erie, were grouped into one project, which was submitted to Congress in pursuance of provisions of the act of September 19, 1890, and adopted by act of July 13, 1892. The project as adopted contemplated the excavation of a ship channel having a navigable depth of 20 feet in the shallows of the connecting waters of the Great Lakes between Chicago, Duluth, and Buffalo, at an estimated cost of \$3,340,000.

This work was divided into eight sections according to locality, as follows.

Section 1—A channel 21 feet deep and 300 feet wide at Round Island Shoals, St. Mary's River.

Section 2—A channel 21 feet deep and 300 feet wide in Little Mud Lake, St. Mary's River, between the lower end of Sugar Island and the lower end of Dark Hole.

Section 3—A channel 21 feet deep and 300 feet wide through a reef in St. Mary's River, abreast of Sailor's Encampment Island.

Section 4—A channel 21 feet deep and 300 feet wide through a shoal in Mud Lake, St. Mary's River, one and one-half miles below Sailor's Encampment Island.

Section 5—A channel 21 feet deep and 2,400 feet wide at the foot of Lake Huron.

Section 6—A channel 20 feet deep from deep water in St. Clair River, through St. Clair Flats Canal, to deep water in Lake St. Clair, with a width above St. Clair Flats Canal not greater than 650 feet; thence gradually narrowing to the canal thence; for the full width of the canal for its entire length; thence gradually widening to a width of 800 feet at deep water in Lake St. Clair.

Section 7—A channel 20 feet deep and 800 feet wide through Grosse Point flats, Lake St. Clair.

Section 8—A channel 21 feet deep and 800 feet wide through the bar at the mouth of Detroit River.

To obtain a navigable depth of 20 feet a depth of 21 feet was required where the excavation was through solid rock or through shoals infested with bowlders, and a depth of 20 feet where the cut was through soft material.

Contracts for the excavations as above specified were let December 31, 1892. Work was begun under contract at the eight localities in May and June, 1893. Section 3 was the last one to be finished. The west half of the channel in section 3 was open for use of navigation October 12, 1896, and the entire section was completed June 22, 1897.

At the time the project was submitted for the ship channel, it was based upon such information as was immediately available. At the same time it was borne in mind that a general examination and survey of the waterway in the vicinity of the work in progress should be made in order to ascertain whether there were other areas that should be improved in order to secure a clear depth of twenty feet in the connecting waters of the Great Lakes. In connection with sections 1, 2, 3, and 4, and other works on St. Mary's River, a system of triangulation was accordingly planned between Point Iroquois and Detour. Also a small system of triangulation in connection with section 8 for controlling the work and connecting the stations. For obtainable hydrography the general plan was adopted to make use of the detailed soundings taken for the final estimates on the dredged shoals also to the soundings every 50 feet on each of the cross sections, which are 500 feet apart. Except where open water prevented, soundings were made through the ice.

The commerce benefited by the improvements at sections 1, 2, 3, and 4 is practically the same as that passing St. Mary's Canal, and at sections 5, 6, 7, and 8 is practically the same as that passing Detroit River. The effects of these improvements upon commerce cannot be accurately determined, but to them is due the increase in the traffic through St. Mary's River and Detroit River, amounting in 1895 to 14 per cent, or 1,866,720 tons, and 7 per cent, or 1,582,800 tons respectively.

The 20 and 21-foot channel improvement was in charge of Colonel O. M. Poe, corps of engineers, to October 2, 1895, having under his immediate orders Lieutenant Charles Riche, corps of engineers, to July 27, 1896, and Lieutenant J. B. Cavanaugh, corps of engineers; in the temporary charge of Lieutenant Cavanaugh from Octo-

ber 3, 1895, to May 7, 1896, and of Lieutenant Colonel G. J. Lydecker, corps of engineers, since May 7, 1896, with Lieutenant Cavanaugh under his immediate orders since that date.

Other improvements in the channel in St. Mary's River are contemplated, which will be of still further benefit to lake traffic. At the present stage of water there is a depth of only eighteen feet at the middle Neebish. On August 31 contracts will be let to increase the depth of the channel at that place to 21 feet and widening it from its present width of 300 feet to 330 feet or more, providing a uniform depth of 20 feet throughout the river; also for widening the channel at Round Island shoals from 300 feet, the present width, to 800 feet, and for widening the west approach to St. Mary's Falls Canal from 600 feet, the present width, to 1,000 feet. All the contemplated improvements are necessary and will be hailed with delight by vesselmen.

THE LARGEST COAST DEFENCE GUN EVER CAST.

On the 12th inst. the Bethlehem Iron Company made the heaviest open-hearth gun ingot which has ever been cast. It required metal from three furnaces to fill the mold. The ingot weighed 213,000 pounds or nearly 100 gross tons. It was octagonal in shape. The length was 16 feet 10 inches and the diameter 74 inches. This ingot will be forged into a tube for a 16-inch experimental nickel steel gun which this company is to make for the United States Army. The forged tube will be 35 calibers or 46.6 feet in length. The jacket for this gun will require an octagonal ingot of even greater weight, namely, 243,000 pounds, or 108 tons.

Even these large masses of steel have been exceeded in the rectangular ingots cast by this company for armor plate. The 17-inch port plates for the two turrets for the 12-inch guns of the battleship Iowa required nickel steel ingots weighing 273,350 pounds, or 122.1 gross tons.

GET AFTER IT.

The directors of the Astronomical Society of the Pacific have formally accepted the foundation and endowment of the gold medal by Miss Catherine Wolfe Bruce, of New York City, to be awarded not oftener than once a year by the society, "for distinguished services to astronomy." The medal is to be of gold, about 60 millimetres in diameter and is to bear the seal of the society on the obverse. The reverse is to bear an appropriate inscription. The medal is to be awarded to one person annually out of a list of astronomers nominated to the society by the directors of the Lick, the Yerkee, and the Harvard College observatories by the observatories of Paris, Greenwich and Berlin. It will not be given twice to the same person.

ANOTHER STEAMBOAT INQUIRY.

The board of inquiry on the wrecking of the steamship Mexico in Dixon's Entrance, Thursday, August 5th, has revoked the pilot papers of Capt. Thomas, master of the steamer, and suspended him for 60 days. The papers of Pilot Connell, who was on the bridge at the time of the disaster, have been revoked for a period of 30 days. It is stated that they found that the blame was with Capt. Thomas, who had retired. It was held that he should have been on deck, especially as he had placed his vessel in a dangerous position. Further it was found that the rock on which the steamer struck was West Devil's Neck, and therefore was known to the navigating officer of the Mexico.

NEWS AROUND THE LAKES.

CHICAGO.

Special Correspondence to the Marine Record.

Capt. John Prindiville chartered the steamer Vega for corn to Buffalo at 1½ cents; steamer Oscar T. Flint, for wheat to Sandusky at 1½ cents; steamer Norwalk, corn to Kingston at 2½ cents; steamer Nahaut, oats to Buffalo at 1½ cents.

The steamer Westover when going out light Wednesday afternoon, struck the stone work on the south side of Wells street bridge with her bow, doing slight damage. The collision was occasioned by the breaking down of the steamer's machinery, which rendered her unmanageable.

At the shipyard here, the schooner Sophia J. Luff was in dock for some new bottom plank and calking; the steamer Pine Lake for repairs to wheel and fastening same. At the floating dry dock the tug Mollie Spencer was on and had her stern pipe calked; the schooner Merlin is on having a leak stopped and her bottom cleaned and painted.

Th steamer Lorain L., when coming into port Monday afternoon ran into the south side breakwater, and badly damaged her bows, causing her to leak. The Dunham Towing Co.'s tug Mosher went to her assistance and pumped her out and towed her to Miller Bros.' dry dock for repairs. The accident was occasioned by the steering gear breaking down.

Johnston Bros., Marine Boiler Works, Ferrysburg, Mich., are building for Lyon & Drews, dredging contractors, Chicago, two steel dump scows, 115 feet long, 28 feet wide, 10 feet deep; capacity about 450 cubic yards each. One will be launched this week. They are also building for the same firm a fire box boiler, 7 feet diameter, 18 feet long, for a large new dredge the firm are building here.

J. J. Rardon & Co. chartered the steamer Henry Chisholm for wheat and barges Adriatic and John Martin for corn to Buffalo at 1½ cents; steamer John F. Eddy, corn to Midland at 1½ cents; steamer Phenix, oats to Buffalo at 1½ cents; schooner Maria Martin, oats, Milwaukee to Port Huron at 1½ cents; steamer Aragon, corn to Blackrock at 1½ cents; steamers City of London and Maurice B. Grover, corn to Buffalo at 1½ cents.

Monday morning as the Western Transit Line steamer Buffalo was going up the south branch of Chicago River, without a tug, she carried away the jib-boom of the schooner Lake Forest, lying outside the schooner Rouse Simmons at a dock on the west side of the river between Monroe and Adams streets. The force of the collision broke the lines which held the Rouse Simmons at the dock and drove the schooner back against the protection piles at Adams street bridge and damaged her port quarter.

H. W. Cook & Co. chartered the steamer Katahdin for corn to Lake Ontario at 2½ cents; the steamer W. H. Wolf, corn to Buffalo at 1½ cents; steamers Thomas Davidson, Fred Pabst and Venezuela, for corn to Buffalo at 1½ cents; steamer New Orleans, corn to Buffalo at 1½ cents; the steamer Wm. B. Morley, corn to Lake Ontario at 2½ cents; the schooners C. H. Hackley, Minnie Slauson, H. C. Winslow and Bliss and steamers Westover and Sanilac for lumber, Manistique to Chicago at \$1.00; schooner Jesse L. Boyce, lumber, Menominee to Chicago at \$1.00; schooner Lake Forest, lumber, Saint Ignace to Chicago, at \$1.12½; steamer John Otis, lumber, Marinette to Chicago, at \$1.00.

BUFFALO.

Special Correspondence to the Marine Record

The Northern Line steamers, West and Land, are doing a great business this season. Passengers galore and spondoos pouring in for the owners of the large passenger boats at every trip.

The contract for building the addition to the export elevator has been awarded to James L. Record, of Minneapolis. He constructed the marine elevator at this port, and is well-known as one of the best elevator builders in this section of the country.

This is the best port on the lakes for building tugs, and it is possible that the late Capt. Tom Maythan had much to do with this feature of the port, as he always wanted good boats and saw that he got them.

The G. A. R. visited Buffalo this week and Buffalo visited the G. A. R. All they wanted was here, and they wanted all they got; furthermore as far as I understand, the G. A. R. captured the city, also the naval veterans' union, who were much to the fore.

Fuel is getting mighty scarce here now, and the price has gone up to \$2.75, besides some of the docks have no coal to spare, at any price, and, unless the strike is soon settled there is likely to be a shut down on cargoes for want of fuel, although everything has been taken care of up to date. Erie is nearly skinned out also.

There has been much talk the last week or two about the sunken steamer Dean Richmond, which is at the bottom of Lake Erie, so every one believes, a few miles above Dunkirk. Rumors and rumors have been floated to the effect that the Richmond has been found. All of them have been exploded, however, and without a satisfactory result.

The new tug America is probably the largest harbor tug on the lakes. Her length is 87 feet, beam 21 feet and she

draws a depth of over eleven feet of water. She has a fore-and-aft compound engine, cylinders 16 and 32 by 27-inches strokes. The boiler is allowed a pressure of 150 pounds. The Union Drydock Company built her for the Erie Tug Company, of Erie, Pa.

The arrival here of the steamer Queen City with a cargo of 5,200 gross tons of ore, naturally sets the older vesselmen to thinking of the days, not so very long ago either, when a cargo of more than 1,000 tons was a big one. Some of the more speculative marine men predicted something of the sort, but they all fell short of the fact. Old Hiram Winslow was one who used to talk in this vein, and he earned the name of Crazy Hi for it. He used to say that the day was not far off when there would be no sail vessels left, beyond here and there one. All would be steam and metal built. And they would "carry 100,000 bushels at a cargo." Even he would have laughed at a prediction of the cargoes that are now so common.

These rumors, though seeming to have no foundation, gave to the underwriters and others interested in the sunken vessel, encouragement to institute a search for the boat. This course was practically decided upon and it was intended to have Capt. McLeod go to Dunkirk to verify, if possible, the rumors that the Richmond had been found. It was stated in one of the local papers that Capt. McLeod would go to Dunkirk in a day or two to look for the boat. This is incorrect. A reporter for the Express saw Messrs. Pfohl & Son, who are interested in the cargo of the Richmond, yesterday afternoon. The reporter was told that no one who knows anything about the boat is of the opinion that it has been found, and also that a search for it would not be made. For the purpose of confirming this the reporter then went to Smith, Davis & Co. Here Frederick Meyer was seen. Mr. Meyer said that those interested in the sunken vessel are not of the opinion that she has been found or that any one, so far as they know, has come near to finding it. He said, however, that at one time it was the intention of the underwriters to have Capt. McLeod go to Dunkirk and make an official search for this vessel, but this plan, Mr. Meyer said, has been abandoned for the reason that the underwriters and other interested parties have received no information that would warrant an expedition being sent to Dunkirk. This decision of the underwriters should settle the question as to whether anyone has knowingly approached the sunken vessel.

The Argonaut, a submarine craft, was launched last week from the yards of the Columbian Iron Works in the presence of a large crowd of interested speculators. Miss Myriam Lake, daughter of the inventor, christened it. This vessel, which is the invention of a Baltimorean, Simon Lake, is, as far as intentions and appearances are concerned, one of the most unique ever constructed. It is intended for commercial work, including the exploration of the bottom of rivers, lakes, bays and even seas, or wrecking work. The cigar-shaped hull has two big iron wheels attached to it near the bow. The edges of the wheels are corrugated like those of a cog wheel. A smaller wheel of a similar character is attached to the boat at the stern. The wheels are intended to enable the vessel to run along over the bottom of rivers and other bodies of water, the propeller of the vessel supplying the necessary motive power. The boat will be so arranged that divers can come in and go out of the vessel while she is on the bottom of rivers. The Argonaut is 36 feet long and 9 feet in diameter, built of steel and strongly ribbed, to resist the water pressure. She is propelled, when on the surface, by a gasoline engine of 30 horse power. She can also be propelled, while on the bottom by the same engine, the air supply being obtained through a hose leading to the surface and supported by a float. She can be propelled along the bottom by an electric motor as well, taking current from a powerful storage battery. Searchlights are mounted on the bow and sides. Her speed is estimated at eight miles an hour on the surface and about five miles an hour on the bottom. She will have fuel carrying capacity for a run of about 2,000 miles. The crew will consist of a master, engineer and four divers.

CLEVELAND.

Special Correspondence to the Marine Record.

Freight rates are advanced this week on the D. & C. Line, but the passenger rates remain the same.

An official of the Cleveland Ship Building Co. denies that they have received a contract for another 5,000-ton steamer.

Albert J. Gilchrist is picking up in admiralty work and he has many cases now on hand, which will come out all right for his clients.

The Cleveland Ship Building Co. have nearly got their new plant in shape at Lorain and further orders for new tonnage will be carried out at that point.

James A. Dumont, Supervising Inspector General of Steamboats, visited the port this week. He found the local department in charge of Messrs. De Wolf and McGrath up to its usual standard of efficiency and order.

The local naval reserve corps covered themselves with glory on their late drill cruise, and it is the wonder of all interested how they could have become so proficient in the limited time during which they have been enrolled.

Nick Boylan, dock manager of the C. & P. Coal Co., is one of the most popular men on the river front, and he always gets what he goes after. Nick makes more sales in an hour than his competitors do in one week.

Capt. Cummings, of the steamer Coralia, now wants a

telephone to ring up "Jimmy Ducks," perhaps he can also ring up a port wheel when he is sleeping; port is the order of the day, anyhow, and Capt. Cummings ought to be in the swim, as he evidently desires to be.

Mr. J. R. Oldham, of this port, contributes a valuable and timely article to this month's Cassier, on the "Traffic of the Great American Lakes." It is one of the writer's best, and should redound to the prestige of the lakes, the author and Cassier's monthly journal.

The lawyers of the United States assembled for an annual convention at this port were given a lake ride Wednesday on the City of Buffalo. All expressed themselves as being highly pleased with the courtesies extended by the manager of this popular line.

The dry docks have been rather lazy this week, and nothing has been docked either by the Ship Owners or the Cleveland Dry Dock Co. It looks as if we ought to have a few more strandings, collisions, fires or something else to keep these large dry docks at work for the benefit of owners and underwriters.

L. P. and J. A. Smith have completed two sections of the breakwater at Ashtabula. Each one is 216 feet long. They are built according to the latest plans and will be towed down from here and sunk into position. Saturday last the first section of the Conneaut breakwater was sunk under the supervision of the government engineer. It is 144 feet long. Another section remains which will be ready to go in in a few days.

The steamer Empire City, built by the Cleveland Shipbuilding Company, to the order of Wolvin et al., Duluth, left here on Saturday on her maiden trip, after waiting a month or so for the Babcock & Wilcox water tube boilers, although she was otherwise completed. Owing to the low ruling of freights her owners could not have lost much, if any, money, by the delay in getting her boilers sent through from New York.

The Benham line steamer Nahant has been fitted with one of the Chase Machine Co.'s new steam steerers and it is found to give excellent satisfaction. The owner, master and engineers speak in high terms of the new steam steering gear, which is the invention of Mr. James Chase. Similar reports are heard from the tugs on which the compact jet powerful steerer has been placed.

DETROIT.

Special Correspondence to the Marine Record.

Chartering has been fairly good her this week. John Stevenson reports several good charters and business picking up, so that the future looks very much better than it did a week or two ago.

The river mail boat, Florence B., docked at Oades yard on Monday for bottom cleaning and searching up. The steam yacht Vita was also docked for a new wheel. Mr. Oades keeps his plant working in spite of the dull times, and there are few more energetic than is the old man's son.

Now what does Mr. Grummond intend to do? His steamer, State of Michigan, has been taken over the river dismantled and laid up in Canada waters, apparently for the season. I could not learn anything direct on a call at the office of the Grummond Line.

FLOTSAM, JETSAM AND LAGAN.

A pool has been entered into by the three tug lines at Duluth. They desire to avoid expensive competition, and will maintain schedule rates. All differences will be referred to Capt. J. T. Rose, of Duluth, who will pose as a disinterested arbitrator.

It is reported that the Cleveland Shipbuilding Company and the Chicago Shipbuilding Company have each received a contract for the building of new steel vessels of the latest pattern. The owners are said to be either Cleveland, Chicago, or Duluth vesselmen.

Capt. Reynolds claims that he has located the wreck of some unknown schooner in thirty-six feet of water at about one and one-half miles off Fish Point. He left for that place this morning with the tugs Eddy and Smith and a diving apparatus. Divers will examine the wreck and endeavor to find out something more concerning it.

A Washington correspondent tells of a western congressman whom he once heard declaiming in a Washington hotel about the new navy. "We must have speed in our new ships," he said; "if I had my way about it we would never build another cruiser that could sail less than twenty fathoms an hour!"

When the work now being done on the gunboat Yantic at the Charlestown Navy Yard is completed and the ship has been delivered to the Michigan Naval Reserve, at Detroit, that command will have the finest naval reserve ship in the country. She will be in as good shape as when she was in commission, a good deal better in fact than she has been in the last three years. Her guns have been taken out, her engines have been given a thorough overhauling, her bowsprit, mizzenmast and rigging renewed, decks repaired throughout, and interior overhauled. The work done on her at the yard will have cost \$18,000 and will be finished by the end of September.

The cargoes of tows bound down the lakes this week from Duluth aggregate almost 1,000,000 bushels, or about 28,000 tons. Capt. James Davidson has prepared figures showing what he claims is the largest consignment of grain that ever left a lake port in a single tow. The steamer Appomattox has on board 115,000 bushels of wheat, or 3,450 tons. The schooners Crete has on board

123,000 bushels of wheat, or 3,690 tons; Armenia 122,786 bushels of wheat, or 3,684 tons; Algeria 122,000 bushels of wheat, or 3,660 tons, aggregating in all for the tow 482,786 bushels of wheat, or 14,484 tons. However, the steamer Sacramento, towing the schooners Abyssinia, Athens and Granada, is also bound down from Duluth, this tow having on board very nearly as much as the Appomattox and consorts.

The returns for the last fiscal year show that eighty-five per cent of the personnel of the navy are Americans by birth or naturalization.

According to figures compiled by the New York Sun the pensions now paid by the United States consume fully nine-tenths of the revenues of all the custom-houses in the country. The number of pensions now paid—more than thirty years after the war has closed—exceeds by a quarter of a million the total number of soldiers engaged in the service at any one time during the progress of the war. The country has paid \$2,000,000,000 so far in pensions. And where do the sailors come in.

The Maritime Register, of Philadelphia, says that it is "a great pity that tariff screws were not so tightened on some of our millionaires that they would be obliged to buy their yachts in America, the country to which they are indebted for the means they possess. The Register should say the United States of America, is a large country, if you take it North and South. From the magnetic pole to the farthest South is still America or the continent thereof. We hold that the United States is a big enough mark, or it is nothing.

There is mourning in New Bedford for the famous old whaling craft, the Cape Horn Pigeon, that went down in the Japan sea. She was built in days when whaling was the chief pursuit of the New Bedforders, and she did as much as any craft to make the little New England port famous the world over. The Cape Horn Pigeon was a bark about 100 feet long, and was one of the luckiest ships afloat, at least so thought the New Bedforders, for she never failed to make fine catches. Even in these days of steam whalers she had held her own, and only a short time before her career ended her master sent home 2,000 pounds of bone valued at \$10,000. When she sank she had 200 barrels of sperm oil in her hold. Not many years will pass before the last of these doughty old boats will lie bleaching on the home strand or will have gone into the depths from which she has drawn so much for her owners.

The secretary of the treasury has reduced the fines imposed on several masters of Lake Michigan craft. Capt. C. H. Burke of the steam launch Hattie Ray of Grand Haven was fined \$2,000 for having less than the required number of life preservers. The secretary decided that as the vessel was at the dock and not being sailed the offense is merely technical, therefore the fine is cancelled. Capt. Logan J. Drake of the tourist, Grand Haven, had his fine reduced from \$2,000 to \$10; John Smith of the Annie L. Smith, at Manistee, from \$2,550 to \$10; Charles Morrison of the Andy, at Benton Harbor, and Henry Risto of the Richmond, at St. Joseph, have had their fines cut from \$2,000 to \$10.

The transportation problem is one of those unsolved questions that are being forced to a solution by the pressure of competition in the effort of the United States to secure a foothold in foreign markets. To secure and retain these markets we have not only to increase our merchant marine, but to count on the costs of our interior transportation of merchantable goods to the seaboard. These are interacting and vital in gaining the object sought for. The United States is a land of tremendous distances, and from points of manufacture to points of sale the factor of cost is of supreme importance. We may be able to produce in larger quantities, and by means of labor-saving machinery be able to sell at lower prices, but if transit charges are not on the same economical lines the advantages at one end are counterbalanced by the costs at the other. This may result in a radical revision of freight rates from interior points. As to how far this can go under present conditions few men are far-sighted enough to predict. The struggle for supremacy is a matter of business, and while it would be suicidal to lose two dollars at home to gain one elsewhere, the problem will sooner or later come to the front.—The Age of Steel, St. Louis.

The Chicago drainage canal, which will be completed early in 1898, with the accompanying improvement of the Des Plaines and Illinois Rivers will open a channel fourteen feet in depth and 289 miles in length from Chicago to the Mississippi River. The canal itself has a minimum top width in rock cut of 162 feet, a depth of 22 feet and a maximum current of two miles an hour. It will cost \$29,000,000 and \$20,000,000 are required for the improvement of the two rivers. All the sewage of Chicago will be turned into this new channel, and in order that it may be less offensive, it is to be diluted with a minimum of about 16 times its volume of pure fresh lake water, which, together with purification by bacterial and aeration influences, and its diffusion with the volume of the Mississippi, 135 times as great, it is hoped, will make it harmless and inoffensive on its 1,600 miles course to the Gulf of Mexico. The Canal will be available for ship navigation, and Chicago expects to derive from it a possible revenue from the traffic of more than 20,000,000 tons of annual shipments on the lakes which would thus be connected with the commerce of 25,000,000 people who live in the Mississippi Valley and along its 15,000 miles of navigable tributaries.—Army and Naval Journal.

A LIFE SAVER RETIRED.

An important chapter of history in connection with the life-saving service is recalled by the retirement of Capt. Lucian M. Clemons, as keeper of the station at Marblehead. The first gold medals ever awarded by the United States government for the rescue of shipwrecked persons were received by residents of Marblehead, Ohio, who were not then in the service, although one of the first life-saving stations established on the Great Lakes, and was equipped shortly afterward. The circumstances leading to this substantial recognition of heroism make an interesting and thrilling narrative. Capt. Lucian M. Clemons, and his brothers, A. L. and Hubbard, were the rescuers who braved the wind and waves to save human beings, and who were rewarded for their self-sacrificing courage.

The schooner Consuelo, a craft of 450 tons burden, which had made a voyage across the Atlantic to Liverpool in the early sixties, left Cleveland April 30, 1875, bound for Buffalo, laden with block stone. The vessel carried a crew of six men and a woman cook, but had proceeded only a short distance when a storm arose, and forced her to seek shelter. Accordingly she was headed for the south shore of Kelly's Island, about twelve miles from Sandusky and three miles north of the rocky shores of Marblehead. This course proved a fatal error. Between Kelly's Island and Marblehead the water is nowhere deeper than 30 feet, and, consequently, "a nasty sea" comes up very quickly in a breeze.

The Consuelo's cargo had been hastily stowed, and either through carelessness or to facilitate unloading, rollers had been left under some of the massive blocks of stone in the hold. The vessel pitched and tossed so that the blocks and the whole cargo shifted, and suddenly, almost without warning the schooner gave a lurch and



KEEPER CLEMONS, U. S. L. S. S., RETIRED.

foundered. The captain, three men and the cook were lost, but Mate Donahue and one of the sailors succeeded in clinging to the spars, where they were sighted from Marblehead by the Clemons brothers, who went to their rescue. They started in an open rowboat. Time and time again it seemed as if their frail craft must certainly swamp, and just as they were about exhausted, they reached the two sailors who were clinging to the wreckage and picked them up. But the danger was by no means past, as the strength of the two men was entirely spent and the storm was increasing. It is likely that none of the occupants of that little boat would ever have reached shore alive had not the tug Winslow come to their assistance and landed them safely on Kelly's Island.

In due time the feat of the Clemons brothers was brought to the notice of the authorities at Washington, and after many necessary formalities had been complied with Capt. Clemons received the following letter from the Treasury Department, which was accompanied with the first gold medal ever awarded for such services:

"Treasury Department,

"June 30, 1876.

"Lucian M. Clemons, Esq., Marblehead, Ohio—Sir: I have the honor to transmit herewith a life-saving medal of the first class, which has been awarded to you under authority of the provisions of the seventh section of the act of Congress, approved June 20, 1874, for the extreme and heroic daring manifested by you in the rescue, under circumstances of peculiar peril and difficulty, of two men from the wreck of the schooner Consuelo, near Marblehead, Ohio, on the 1st day of May, 1875.

"In sending you this medal it is remarked that it and

two others respectively awarded to your associates in the hazardous undertaking referred to, are the first that have been issued under the provisions of the act named, and the Department is gratified that the law should commence its operation by honoring and commemorating an action of such distinguished gallantry. I have the honor to be, sir, your obedient servant,

"CHAS. T. CONANT,
"Acting Secretary."

A. J. Clemons and Hubbard M. Clemons received similar letters and gold medals. The letters are highly prized and have been framed by the recipients. The medals are of handsome design and very heavy and valuable, each containing \$200 worth of gold and \$50 worth of alloy. They are three inches in diameter, while those now given by the government for like services are but two inches in diameter, and correspondingly thinner and less valuable intrinsically. September 9, 1876, the life-saving station at Marblehead was established, and Captain Clemons was appointed its first keeper as a further recognition of his gallantry. This position he has just resigned, and now lives a life of retirement and ease. The captain is advanced in years, but still hale and hearty and much more active than many younger men.

NOTICE TO MARINERS.

Treasury Department,
Office of the Light House Board,
Washington, D. C., Aug. 21, 1897.

MENOMINEE PIERHEAD LIGHT STATION.

Notice is hereby given that on or about September 4, 1897, there will be established at this station, on the outer end of the north pier at the mouth of the Menominee River, west side of Green Bay, a 10-inch steam whistle, to sound, during thick foggy weather, blasts of 5 seconds' duration, separated by silent intervals of 25 seconds, thus:

Blast	Silent interval	Blast	Silent interval
5 sec.	25 sec.	5 sec.	25 sec.

By order of the Light House Board:

W. S. SCHLEY,
Captain, U. S. Navy, Chairman.

Office of U. S. Light House Inspector,
Tenth District,
Buffalo, N. Y., Aug. 20, 1897.

Notice is hereby given that two 25 feet spar buoys painted red, and numbered respectively 2 1-2 and 4 1-2, have been placed to mark the west bank of the channel opposite Strawberry Island, Niagara River, and nearly opposite black spar buoys Nos. 3 and 7, on the east bank of the channel. Buoy No. 2 1-2 is in 16 feet of water and Buoy No. 4 1-2 is in 15 feet of water.

THEODORE F. JEWELL,
Commander, U. S. N.,
Inspector Tenth L. H. Dist.

Treasury Department,
Office of the Light House Board,
Washington, D. C., Aug. 18, 1897.

BIG SABLE LIGHT STATION.

Notice is hereby given that on or about September 1, 1897, there will be established at this station at Big Sable Point, south shore of Lake Superior, between Whitefish Point and Grand Island, a 10-inch steam whistle, to sound, during thick or foggy weather, blasts of 3 seconds' duration separated by silent intervals of 17 seconds, thus:

Blast	Silent interval	Blast	Silent interval
3 sec.	17 sec.	3 sec.	17 sec.

By order of the Light House Board:

W. S. SCHLEY,
Captain, U. S. Navy, Chairman.

Halifax has about the best name of English derivation of any city in North America. It is euphonious, emphatic, and distinguished, and lends itself with exceptional success to the uses of verse. There is a Halifax of considerable size in Yorkshire, England, a village of the name in Vermont, and Halifax counties in Virginia and North Carolina, but the Halifax is the foggy Nova-Scotian capital which the Indiana has lately visited to be dry-docked. Every one has grinned in a good-natured sort of way at the anti-British Jingo as any one, but it seems to have been taken in good part all around. Americans who have the interest of our navy at heart have been pleased to have our lack of proper dry docks so conspicuously demonstrated, and have also been rather pleased to have one of our biggest and best ships exhibited where her merits could be appreciated. Halifax has liked it because she has made a little money and had a good deal of fun; for Halifax, in spite of her fame, is not the liveliest place in the world, and appreciates a novel sensation.—Harper's Weekly.

A WOULD-BE PATERNAL GOVERNMENT DEPARTMENT.

It has been widely heralded by the daily press, and in some instances at great length, that the Weather Bureau intended to show and prove by the waves of temperature, why, when and where the increase or decrease of crime should exist, be dormant or non-existent in all parts of the United States.

An editorial in the Buffalo Enquirer treats of this subject in the following jocular strain:

Chief Willis L. Moore of the Weather Bureau of the Department of Agriculture at Washington has made a great discovery. He has become convinced that there is a close connection between atmospheric conditions and the morality of the country. He has found by experimentation that crime waves may be traced, and that the passions of men run on isothermal lines. As soon as sufficient data can be gathered we may expect that the Weather Bureau will make up daily charts with isometric readings of the quantities of crime, and send out bulletins based upon the relatively moral or immoral conditions of the various points where observations are taken. Then we may expect some thing like this:

Local forecast for Buffalo and vicinity for the period ending at 8 p. m. to-day.

Suppressed passions with probable outbreak of bigamy and second-story work to-night; to-morrow quite pure; slight indications of embezzlement in some circles; wave of distrust coming, many false arrests probable. Crime center now stationary over Rochester (N. Y.).

Local data during the past twenty-four hours at Buffalo was: Maximum arrests 37; minimum 3. Christian forbearance a trace.

The following was reported at 8 a. m.: Buffalo, passions under control; Boston, profane; Cincinnati, hilarious; Chicago, pugnacious; Denver, predatory; Jacksonville, extortionate; New York, wicked; New Orleans, stupid; Omaha, enraged; St. Louis, sentimental; St. Paul, conspiring.

This opens a new field for the faculties of man to sow and reap in. We shall probably need some new instruments akin to the anemometer, barometer, thermometer and rain-gauge, but they will come in time, the arsonometer, the theftometer and all the other ometers. At present Chief Moore and his assistant, Dr. Phillips, have not proceeded further than to demonstrate by statistics that there are more lynchings in the summer than in the winter, also more murders and suicides, but this is plentiful proof to the Great Forecaster that crime and weather go hand in hand.

In comparison with the sixteen-candle power brilliancy of this idea, the petty experiments in road-making and beet-sugar bounties and armor-plate manufacture by State and Federal authorities pale into twinkling insignificance.

Of course there was no serious intention of the Bureau to enter upon any such investigation and besides Chief Willis L. Moore strenuously denies that any experiments on the lines of crime waves is being carried on by his bureau, or that he has any theory connecting the phenomena of crime with those of meteorology. He is annoyed by the publicity given the Washington dispatch which conveyed this information.

HIDE--HYDE.

Alike to everybody who witnessed the crowning feature of England's jubilee year, the naval review at Spithead, Gen. T. W. Hyde, of the Bath iron works, returns home with impressions of the colossal power of Britain's shipping interests. But he joins other friends of the American ship who are encouraged by the attitude of the present administration at Washington, when he says that gleams of light are shining through the pall that strangely has fallen over American public opinion as to the need of naval power." A description of the naval review by Gen. Hyde in one of the Bath papers is very interesting. He concludes it with the following plain statement of fact:

"When we apply arithmetic instead of self-congratulation and a boastful spirit to naval affairs, our own weakness, even after 10 years of the growth of a new navy, is painfully apparent. We should not deceive ourselves. In this matter we cannot deceive any one else. Of the three classes of ships that, judging from present appearances, will decide future actions at sea, battleships, destroyers and torpedo-boats, England has built and is building 66 battleships, the United States 11; England some 92 destroyers, we have one, building; England has some 200 torpedo

boats; we have four built and 15 building. In the first naval engagement most ships not destroyed will have to be docked and repaired. England has 17 drydocks at Portsmouth alone; we have just sent the Indiana to Halifax to be docked. England has a vast merchant marine to draw sailors from; we had once. The strangest supineness and lack of appreciation of sea power seems at the close of this century to have fallen like a pall over American public opinion. But there are gleams of light. We can not continue much longer to neglect what has in all history made and kept the nations great in wealth, in influence, in power, that is, strength upon the sea. The next congress will doubtless take up the question and upon their wisdom depends our country's future. It would be impossible for an American to fail to be jealous of such vast power and prosperity shown by a nation long our rival, though our kin. Yet we can not but rejoice in the thought that it is England's and not some other's. To one who has seen the British hospitality of the war years, and the thin veiled dislike that long after followed, their present friendliness is welcome, but we will not yet forget Bunker Hill, or Yorktown, or New Orleans.

AMERICAN SHIPBUILDING, 1896-97.

Sailing and steam vessels built in the United States and officially numbered, as shown by the records of the Bureau of Navigation, Treasury Department, during the year ended June 30, 1897:

STEEL.				
	STEAM.		SAIL.	
	No.	Gross.	No.	Gross.
Atlantic and Gulf..	25	19,769.28	.....	.....
Pacific .....	.....	.....	.....	.....
Great Lakes	15	55,866.29	II	34,630.37
Western Rivers....	2	617.50	.....	.....
Totals.....	42	76,253.07	II	34,630.37

IRON.				
	STEAM.		SAIL.	
	No.	Gross.	No.	Gross.
Atlantic and Gulf..	3	1,819.38	.....	.....
Pacific .....	.....	.....	.....	.....
Great Lakes .....	.....	.....	.....	.....
Western Rivers....	.....	.....	.....	.....
Totals.....	3	1,819.38	.....	.....

WOOD.				
	STEAM.		SAIL.	
	No.	Gross.	No.	Gross.
Atlantic and Gulf..	131	14,206.56	317	19,872.87
Pacific	39	3,863.20	35	5,497.93
Great Lakes	29	6,088.64	19	4,576.52
Western Rivers....	103	10,834.55	.....	.....
Totals.....	302	34,992.95	371	29,947.32

SUMMARY.		
	No.	Gross Tons.
Total steam	347	113,065.40
Total sail.....	382	64,577.69
Grand total	729	177,643.09

YEAR ENDED JUNE 30, 1896.		
	No.	Gross Tons.
Total steam ...	322	134,947.08
Total sail.....	387	69,029.77
Grand total	709	203,976.85

Trade between Atlantic and Pacific ports via Cape Horn, once a route of very considerable domestic ocean traffic, has dwindled until now it may be said to be entirely a chance trade. During the last fiscal year, as reported by the Bureau of Statistics of the Treasury Department, thirty-two vessels, aggregating 57,094 tons, made the voyage from Atlantic to Pacific ports, mainly from New York to San Francisco, and only ten, aggregating 17,786 tons, from Pacific to Atlantic ports. These were not in the regular trade, but sailed by way of the Horn, either in ballast or, if fortunate, with cargoes of domestic merchandise, for the purpose of taking at their first destination other car-

CORRESPONDENCE.

We do not hold ourselves responsible in any way for the views or opinions expressed by our correspondents. It is our desire that all sides of any question affecting the interests or welfare of the lake marine should be fairly represented in THE MARINE RECORD.

THE STEAMBOAT INSPECTION SERVICE.

Editor Marine Record:

In the communication printed in the Record of the 10th inst., signed by James A. Dumont, he says: "To assume that inspectors can follow all the steamers they inspect to see that the equipments are on board that were put on board when they inspected the steamer is simply preposterous." In reply I desire to say that if steamers which ply in and out of port once, twice and thrice a week were inspected as they should be, and as required by section 4406 of the Revised Statutes, then the Revenue Cutter boarding officers would never find any cause to impose fines on account of non-compliance with the requirements of a certificate of the inspectors.

But, Mr. Editor, Mr. Dumont has failed to reply to that part of my letter in which I refer to his "so strictly enforcing paltry requirements and let others of greater import to the safety and welfare of the travelling public pass by unnoticed, particularly in the matter of life saving appliances." And he dodges the issue by saying, "that if he (I) will refer to the name of a vessel so failing to be equipped at the time of inspection and will verify the same I, (he), will guarantee to have the officer removed who inspected such vessel."

It is not my province, duty or purpose to assume or take the part of detective or informer for the Supervising Inspector General of steam vessels, in order to make up for his well-known deficiencies, by naming any particular vessel failing to comply with the law or the statutes governing them, but I will say that statutes are openly violated and continually, not only by the local inspectors of steam vessels, but by the Board of Supervising Inspectors of Steam Vessels, of which James A. Dumont is the president, and all with his knowledge and consent.

What would be the result if I would make such a charge? It would be addressed to the Secretary of the Treasury, he would refer it to Mr. Dumont, Supervising Inspector General of Steam Vessels, and he in turn would appoint a board composed of members of the Board of Supervising Inspectors of Steam Vessels, to sit as grand inquisitors for the purpose of enquiring into and making a report on their own doings and actions contained in the charge. Unfortunately there has never been any way of showing up this board or their actions in their proper light, on account of the make-up of the law, and the only way that I can see out of it is to reorganize the whole system with such competent and able men as the Light House Board is composed of. By the appointment of naval officers to fill these positions it would not only be in the interests of economy and a great saving to the government, but would be a guarantee that thereafter the purpose for which the present board was originally organized would be faithfully and efficiently carried out without fear, favor or bias from any source, and the Secretary of the Treasury would have a body of men upon whom he could place implicit reliance for advice and information on account of their unquestioned ability and education. As their commissions hold during good behavior, there could then be no fear of the influence of the National Board of Steam Navigation or any other effecting their actions as is the case with the present board, in order to secure their tenure of office. As it is the whole system is rotten.

Very respectfully,
"JUSTICE."

Among the best pumps manufactured are those of the Goulds Company, Seneca Falls, N. Y. They guarantee every portion of their work and hold perfection for at least one year. There is nothing, or rather, no money in building pumps to-day. The Gould Manufacturing Company are still in line for the most efficient service and the best that the world can produce.

A despatch from the United States Minister at The Hague states that the government of the Netherlands has adopted the international regulations for preventing collisions at sea for the inland waters of that country. As announced in our issue of the 19th inst., and we would further say that the same regulations ought to be adopted here.

GOVERNMENT DRY DOCKS.

The sending of the United States battleship "Indiana" to Halifax, N. S., for dry docking has occasioned much unfavorable comment and has led us to look into the causes which induced this unpleasant experience.

The history of the two dry docks on the Atlantic coast which should be available for battleships is unique and interesting, and when the facts are known we fancy that the administration of the Bureau of Yards and Docks of the Navy Department during the past seven years will be duly criticised.

These docks were especially designed and constructed with the intent to accommodate our battleships. In the three dry docks already built at Brooklyn, N. Y., Norfolk, Va., and League Island, Pa. Navy Yards, the government possesses ample means of docking all others of the naval fleet.

Advertisement was made for proposals for the dock at Port Royal, S. C., July 25, 1890. In February, 1891, a contract was made between the government and Juston McCarthy; the sum named being \$418,915.67. Contract time 24 months from April 23, 1891. The design being the contractors own. The dock during construction gave decided evidences of weakness in its foundations, due to hydrostatic pressure, which the contractor should have made and controlled as a necessary part of his contract, but for which accident he received the sum of \$26,000.

It became necessary to widen the entrance to admit a battleship and \$12,000 was allowed for this item. In addition several mishaps occurred to the contractors coffer dam resulting in its partial destruction during the cyclone of August, 1893. He was allowed for this \$18,521.42, and it may be noted, that had he lived up to his contract, (which time limit had expired in April, 1893), his cofferdam would have been removed and the dock completed, and could not have been damaged by cyclonic disturbances. It was not until the fall of 1895 that a test was made of the dock's capabilities, and at that docking one of the smaller types of monitors was used and ordinary tests to indicate the stability of the dock were made. The gate sills split; the abutments on both sides started inward and a Board, appointed to examine into the facts, commented strongly on "structural weaknesses" and stated that no less than \$18,000 would be required to remedy the defects.

The draft of water called for by contract should have been 26 feet at M. H. W.; but a series of observations, carefully made, showed but 25.2 feet—a most serious discrepancy. So much for this dock designed for a battleship into which the "Indiana" went once and from which the department were only too anxious to remove her, and for which they were compelled to await an Easterly wind and high tide to take her over the sill, owing to lack of contract requirements on the docks structure. Total amount paid contractor, \$475,447.09; time consumed, four years and over.

Regarding Brooklyn dry dock No. 3, at that Navy Yard, advertisement was made and John Gillies made a tender July 13, 1892, and a contract was made with him for a dock 600 feet long for \$412,000.00. Time, 27 months, from January 1, 1893. After work had commenced, or about June, 1893, it was decided to lengthen the dock 70 feet, and a board allowed \$45,556.00 and three months additional time, making a total to date of \$457,556.00 and 30 months for a 670 foot dock. At a later date it was decided to change the site and move the structure inshore 64 feet and the contractor was allowed, by a board, \$5,063.18 increase and two months additional time. Total to date, \$462,619.18 and 32 months, from January 1, 1893.

In April, 1895, the contract with Mr. Gillies was annulled after he had been paid \$165,000.00 and advertisement was again made—resulting in an award to T. & A. Walsh, for \$370,000.00 and extras were allowed by subsequent contracts, which strictly appertained to the dock, making a total to T. & A. Walsh of \$432,000.00, with 19 months allowed for completion.

During the occupancy of this dock by the "Massachusetts," the first heavy vessel using it, leaks developed in the structure and a hurried undocking was made. Examination, by divers, showed that one of the vital points in the stability of the dock, the table-end or apron, was badly broken, and undermined and a further sum of \$100,000 has been appropriated; which sum, it is said, will be inadequate to make the dock serviceable and many months must elapse before a vessel can again enter it in safety. A new cofferdam must be built, and, as this is but "false

work" and must be removed, the money expended upon it will be entirely wasted, except that it is a means to an end and without which the dock cannot be repaired at all.

Thus it will be seen that inclusive of the \$100,000, for coffer dam and repairs, there has been expended upon this dock about \$700,000, and from start to finish, allowing 8 months (a reasonable period of time), for repairs a total of 5 years and 3 months' time, or until April, 1898, will have been consumed.

In both of these contracts the system of accepting the tender of the lowest bidder prevailed and with the result stated.

The firm of J. E. Simpson & Co., New York, made a tender for the Port Royal dock at the same time as Mr. Carthy. Their bid, based upon 40 years experience was \$497,539, and for which, within 2 years, they guaranteed the Government would possess a structure creditable, alike, to itself and to the builders.

At the same time Mr. Gillies bid for the Brooklyn dock, J. E. Simpson & Co. made tender of \$537,579 for a 600 foot dock, (the original length then contemplated), and allowing same amount as allowed Mr. Gillies, for extra 70 foot of length, the total cost of 670 foot dock would be \$583,135, and would have been completed in 1895, and resulted in a saving of over 3 years in time of construction, to say nothing of the difference between \$583,135 and \$700,000, or more, in cost.

At the time Mr. Gillies' contract was cancelled, Messrs. Simpson & Co. laid these facts before the Bureau, by letter, and again made a tender to complete the structure within 16 months from May, 1895, at a cost of \$464,000, to which adding amount paid Mr. Gillies, (\$165,000), would have made the total cost \$629,000, as against \$700,000 or more.

The query arises, why, in view of previous experience with three docks, giving complete satisfaction in every particular, built by Simpson & Co., at the Brooklyn, N. Y., Norfolk, Va., and League Island Navy Yards, should the Bureau have recommended that insufficient plans be tried as experiments—costly ones—as has been amply proven.

These three docks, built by the Simpson's, have met every requirement, and their size alone prevents their use by the battleships—these docks having been designed long before the building of battleships was contemplated. If the entrance ways were large enough no one questions their ability to sustain any weight placed within them.

A LAKES-YUKON RIVER FRIGATE.

The Craig Shipbuilding Co. of Toledo has sold to John Cudahy of Chicago, for the Cudahy-Healy Yukon-Klondike Co., the steel steamer Valley City. The price is not given. The Valley City will be taken by cars to the Pacific, from which place she will be taken to the Yukon River in Alaska to carry passengers to the gold fields. She is well suited to the business, having been built by the Craigs in 1892 for service on the Grand River, between Grand Haven and Grand Rapids, Mich. The parts of the vessel were shipped to Grand Rapids by rail and put together at that place. After a brief season of unprofitable business on Grand River she returned to Toledo by the lake route and ran for a time between Toledo and Perrysburg, until the construction of an electric road killed the steamer business. Since then she has remained idle at the Craig yard. The Valley City is a craft of the Ohio River stern-wheel type, calculated solely for shoal-water navigation. Her length is 143 feet, beam 29 feet and measurement 220 tons. Under her new ownership she will be known as the Capt. John C. Barr. Capt. Barr is the man who has command of the fleet on the Yukon and tributaries. Five more steamers of this type are being built at Seattle, and will be shipped with this boat. They will be shipped from Seattle to St. Michaels, at which place all are to be put together and taken to the Upper Yukon and tributaries.

The New York pilots followed in the wake of the Virginia Pilot Association, of Norfolk, Va., and the pilots of New Orleans; La., in having a steam pilot boat built for service at Sandy Hook. The old, as well as the younger "flat-foots" held for a long time that there was nothing like a piece of canvas over their heads in all weathers and under all conditions, but the progressive spirit of the age could no longer be held down, and after the Southerners set the example New York had simply to come to time. The world renowned Liverpool pilot schooners that were fit to meet anything that ever came out of the heavens and do it comfortably, too, have also been given the go-by for steam and rightly so, too, for steam is now the power afloat, and a good deal of the power ashore, also.

TO ASSIST OUR FOREIGN TRADE.

The Bureau of American Republics has in an advanced stage of preparation a Commercial Directory of the American Republics, and the European dependencies in Central and South America and the West Indies. The volume will be a handsome quarto, nine by twelve inches, of over twelve hundred pages, and will embrace in its contents, the following information:

1. Reliable descriptive, geographical, industrial, commercial and statistical data, and map of each country.
2. The addresses and lines of business of the commercial houses of Latin America and the Hawaiian Islands.
3. The names of five thousand or more representative manufacturers, merchants, shippers and bankers of the United States, interested in foreign trade, classified under proper headings.
4. The names of the trade and commercial organization, associations and unions of the countries embraced in the International Union of American Republics.
5. Valuable data of transportation companies, and trade routes by land and water; railway, telegraph and cable facilities; and particulars as to the shipping port regulations, tariffs and customs laws; patent, trade-mark and copyright laws; and commercial licenses, passports, and postal regulations.

The above information has been secured from the most reliable sources, with a view to accuracy and completeness, and Joseph P. Smith, director, says that he feels assured it will meet the specific requirements of all lines having and seeking foreign trade. To all who apply, specimen pages and subscription blanks will be forwarded.

There is also a monthly number published in English, Spanish, Portuguese and French. All communications respecting information in the monthly bulletin should be addressed to the Director of the Bureau of American Republics, Washington, D. C.

EASTERN FREIGHT REPORT.

Messrs. Funch, Edye & Co., of New York, in their weekly freight report to the Marine Record, says:

The continued and reckless advance in our wheat prices has finally managed to effectually end all demand for this cereal in Europe, including that from France, although the limits from that country had hitherto kept fairly close to our inflated prices. It is unfortunately no mere figure of speech to state that if maize and our minor cereals were being similarly driven up in price, our export trade in grain would dwindle down to a very small percentage of the business transacted during the month preceding this date. The upward rush of wheat has caused some failures amongst shippers caught "short" of this article, and considerable room engaged in parcel lots, and some vessels, have been thrown on the market, which can only be filled at from 6d @ 9d. per quarter concessions in freight. The charters reported to-day for grain are in settlement of earlier sales; we think 3s. to Cork f. o. for prompt vessels from Range, and 2s. 7 1-2 d. for picked ports for large boat, may to-day be called top figures and would not represent new business. The enquiry for deals from the Canadian Provinces has been fairly active, resulting in an advance in rates, against which the demand from the Southern timber ports has become less pressing. The Gulf cotton ports appear to be well provided with tonnage, whilst the Atlantic ports show a comparatively better demand for October boats, but indifferently met, owing to advancing views on part of owners. The inquiry for tonnage for case oil and for general cargo for the Far East continues fairly active, although the former has quite latterly been in part met by engagement of sailing vessels.

Our market for sailing vessels still labors under the difficulty of short supply of tonnage, both on spot and to arrive, and, from all appearances, this state of affairs is likely to continue for some time; consequently our market has been inactive, but rates remain very firm and prospects fair. Nothing of particular interest has transpired the past week.

AN OLD LAKE CRAFT.

News comes from Seattle that the gold fever has seized the members of the revenue marine service. Three of the crew of the cutter Perry, which met the gold-laden steamer Portland at Dutch Harbor deserted and started for St. Michaels. They stole a boat from the North American Commercial Company, robbed the storeroom of the Perry and boldly went out on the open sea for a 700-mile journey to St. Michaels.



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CLEVELAND, O., AUGUST 26, 1897.

Passing signals in a fog when vessels can not see each other is a fraud on seamanship and should be discontinued.

The State Department is informed that the Dominion Government has reduced the fees of the dry-dock at Kingston 50 per cent., which is a matter of interest to the United States shipping on the Great Lakes.

Asst. Naval Constructor R. B. Dashiell, U. S. N., member of the Dock Board, has been ordered by Acting Secretary Roosevelt to proceed to England, France and Germany to examine the docks of those countries, for the information of the Department. Mr. Dashiell will sail on Saturday, Aug. 21, and will be abroad about three weeks.

Contracts were awarded by the Navy Department on Wednesday, August 18, to the Bethlehem Iron Works for six sets of 6-inch and 25 sets of 25-inch gun forgings and to the Midvale Company, Philadelphia, 15 sets of 4-inch forgings. These forgings will be made into guns for the Hartford and auxiliary cruisers at the Washington Navy Yard.

Few people comprehend the multifarious operations of the United States Treasury. We credit it with the supervision of the mints, and the printing and engraving of paper money, stamps and bonds, but, perhaps do not realize that it has under its control a fleet of ninety-seven vessels, or nearly as many as are in the commission of the United States navy. These are employed not only in collecting the customs, but in patrolling the coast, furnishing supplies to light-houses and light-ships, rescuing vessels in distress, enforcing the revenue and navigation laws, as well as being engaged in the Coast and Geodetic Survey and in the service of the marine hospitals. Still other duties fall within the scope of this busy department, all of which are described in a most interesting article in Harper's Round Table of August 24th, by ex-Secretary of the Treasury Charles I. Hamlin. In the same number is a paper on "Boating in English Public Schools," by John Corbin; another of Miss Sophie Swett's excellent stories concerning "Little Portergee," an incident of the War of 1812, by J. D. Findlay; besides the continuation of the serial and many other interesting features.

THAT ARMOR PLATE DEAL.

The government is in a quandary as to the production of armor plate for the battleships Alabama, Illinois and Wisconsin, now in course of construction. Congress has instructed the Navy Department to pay not more than \$300 a ton for the armor-plate that is needed for the new ships, and the Bethlehem and Carnegie companies, the only steel-working establishments that have the extensive special plants necessary for the manufacture of armor plate, have refused to accept that figure, and furthermore, have refused to manufacture plate for \$100 per ton better than the price which Congress is willing to pay. Congress has, in view of this fact, taken steps towards the establishment of a government plant for the manufacture of armor plate, and Acting Secretary Roosevelt has appointed a special naval board to prepare estimates as to the cost of such an establishment, and to furnish information as to the best possible location for the new armor works.

The board will consist of Commodore Howell, commandant of the League Island Navy Yard; Capt. McCormick, Captain of the Norfolk Navy Yard; Chief Engineer Perry, from the Monterey; Civil Engineer Mercal, from the New York Navy Yard; Lieut. F. F. Fletcher, from the torpedo station, with Lieut. W. I. Chambers, from the Minneapolis, as recorder.

There is a wide difference in the estimates as to the cost of armor plate. Secretary Herbert reported to Congress that the total cost of labor and material in a ton of forged nickel steel Harveyized armor, including an allowance of 10 per cent. for losses in manufacture, was \$197.98. Ensign McVay, who was one of the inspectors at the Carnegie works, estimated the cost per ton at \$195.28. These estimates were exclusive of the cost of maintaining the plants. Adding 10 per cent. for this purpose on an estimated valuation of \$1,500,000 and an estimated annual output of 2,500 tons, brought the secretary's estimate per ton up to \$257.78. Arguing that the probable output would be about 3,000 tons for ten years, he figured the cost of maintenance at \$50 a ton, and cut his total cost down to \$247.78 for manufacture. He proposed a profit of 50 per cent., which would bring the total cost up to \$375.

It would appear the better plan for the government to pay a fair price and not to attempt to enter into competition with private interests. Such a result would certainly be less expensive in the end.

The Bethlehem Company estimated the cost of armor plate at \$445 per ton, and the Carnegies put the cost price at \$422.74. In figuring they did not charge interest on their working capital, but charged for loss of the plant by abandonment when the navy should be completed.

BRITAIN'S NAVY.

In a paper contributed to the "marine number" of Cassier's Magazine, Sir Charles W. Dilke takes the position that the British Navy is not as strong as it should be, considering the work it would have to do in case of war, and urges the importance of strengthening it, not only by large expenditures, but also by taking measures that will insure the best results for the outlay. A statesman himself, rather than a naval expert, he fortifies his position by the testimony of acknowledged authorities on naval matters, both in the British service and outside of it.

According to the statistics presented the British Government is spending on its navy at the present time about \$315,000,000 a year. The total appropriations for the United States Navy Department in 1896 aggregated but little over \$27,000,000. Sir Charles Dilke says no power in the world has ever spent such a sum of money on armaments in time of peace as Great Britain is spending, and it is impossible to say it gets full value for the money. Nevertheless, he is of the opinion that while there is room for economy in other departments of government expenditure, it is not safe to stint the navy.

In conclusion Sir Charles Dilke calls attention to the fact that England in 1813 spent far more money on its fleets than is done even now. It had over 147,000 men serving under the admiralty at that time, although in those days, in addition to the force, large numbers of troops, besides the marines, were employed upon expeditions sent by sea. There was an enormous reserve of merchant seamen of British race, while the British merchant seamen of the present day are dwindling in numbers.

At the British Association meeting, held this week in Toronto, Mr. F. Napier Denison of the Toronto University read a paper on "The Great Lakes as a Sensitive Barometer," in which an attempt was made to explain the causes of these oscillations of lake surface. Mr. Denison's observations were taken in the shallower part of Lake Ontario, fronting Toronto, under conditions strongly resembling those at the Lake Erie ports where the "tidal waves" have been most noticed. The records show that the longitudinal and transverse "seiche" movements are very marked preceding and during storms primarily due to differences of atmospheric pressure over the extremities of the lake, but greatly augmented when the gale strikes the water surface. The mean time interval of longitudinal "seiche" is four hours and forty-nine minutes; the transverse, forty-five minutes. There is a marked agreement between the time intervals of the smaller lake undulations and those found upon the corresponding sensitive barograph traces, both showing a predominance of twenty-minute intervals.

Mr Denison explains the smaller lake undulations as due to atmospheric waves, which are set up along the boundary surfaces of different air strata when traveling in opposite directions. The action of these atmospheric waves upon the surface of the water tends to form minute undulations, which increase in amplitude as they move into bays, where the water becomes shallower, until finally they assume the proportions as recorded upon the instrument.

It was found that marked, rapid and large undulations often occur during the autumn and winter months upon both instruments, when the barometer is actually rising and fine weather prevails over all the surrounding territory. The explanation is that at such times an area of low pressure, a cyclone, is situated over the south or southwestern states, which usually moves over or near to the lake region. In such cases the recorded atmospheric waves are due to the lower, denser air of the anti-cyclone moving towards the southwestern cyclone, along whose upper boundary surface huge waves, extending to the earth, are set up by the rapidly opposing upper poleward current. The mean velocity of this upper current in summer is sixty miles per hour, and in winter 110 miles per hour. On the other hand, during the approach of an anti-cyclone, attended by fine weather and westerly winds, these lake undulations become extremely small because the lower air moves in approximately the same direction as the upper poleward current. In illustration of the direct action of these air waves upon the surface of the lake Mr. Denison notes that on March 8 last, during the passage of several successive huge atmospheric "billows," the water rose 8½ inches in ten minutes, then fell 10½ inches in fifteen minutes, followed by the phenomenal rise of 11½ inches in fifteen minutes.

The information obtained from fishermen on Lakes Ontario, Erie and Huron shows that a twenty-minute interval has been frequently observed between the two or more so-called "tidal waves" that follow each other.

The experimental tank which is to be constructed at Washington by the Navy Department for trials with models of new ships, will be the largest basin of its kind under cover in the world. Its dimensions will closely approach those of some of the largest dry docks, and the depth will be sufficient to float many of the smaller ships of the Navy. It will be covered on all sides, and the water will be supplied by the city reservoirs, or pumped from the Potomac River. From end to end the tank will be just 500 feet long and 50 feet across, and the water space will be 475 by 43 feet. Its depth will be fourteen feet. Running across, close to the water, will be a carriage upon which there will be attached a dynamometer to register the resistance due to towing a model through the basin. Models, varying in size from ten to 20 feet of every new ship to be built will be attached to this machinery and drawn through the water. The wave motion will be observed, and the resistance it offers will be calculated. The models will be plain, constructed only with a view to presenting closely the actual lines of the ship it is proposed to build. Through the experiments it is estimated that the plans of all proposed vessels can be improved, and valuable information gathered for use in designing the lines of ships.

There is every sign of improvement in lake freights, shipbuilding and general lake business. It is certain that within the next sixty days lake trade will pick up.

LAKE FISHERIES.

Most of the fisheries on the great lakes and those of British America will probably soon be under the control and ownership of one huge combination, which will be represented in the different ports by agencies, in place of the present houses.

So far as the coalition extends, there will be but one agency in a city, though in the present condition of the movement the combination will not constitute a monopoly of the lake industry.

Last spring Edwin Corbin made a tour of the lakes, visiting the owners of different fish houses, with a view to joining them under one head. While the fishermen were in shape to say that nothing had been done at that time, something has been going on since, and it appears that results have been accomplished, as indicated by this Associated Press dispatch from London, under date of August 24th:

"Mr. Edwin Corbin, of Chicago, has closed a deal amalgamating the United States and Canadian lakes fisheries companies, whereby the control of twenty companies passed into the hands of a British company with 1,000,000 pounds (\$5,000,000) capital. Mr. Corbin sails for the United States next week, accompanied by a staff of British accountants, to talk over the business and initiate the consolidation."

This is the way they go about the undertaking. The different companies who propose to go into the combination make a statement of the business to the syndicate, and then a commission of experts is appointed to go thoroughly over the books of each house and make a report of the value of the concern, which is made the basis of the purchase as the concluding step in the deal. So it appears that the big enterprise is progressing, but is still in an unfinished state. The transaction will hardly be completed for some time, as the examination of the fisheries' showings will be a long piece of work.

"The fisheries on the upper lakes, and Lake Winnipeg, have been doing a tremendous business lately, but not making much money, if in some cases they have not been losing, and they are rather anxious to have something of the kind accomplished. Some of the Lake Erie fisheries will probably be involved. Mr. Corbin may make a second tour of the lakes in an effort to make the combination embrace everything.

HARBOR IMPROVEMENTS.

Regarding the breakwater improvements now under way or in contemplation for the western part of Lake Erie district, Col. Smith, Corps of Engineers, U.S.A., recently made this important statement: "We are contracting for solely the newest and latest type of breakwater. These are built with a special view to the prevention of bars at the entrance of a harbor, being so constructed as to drive material away from instead of towards the entrance. Some of the old ones do not do this. Any kind of a storm is sometimes sufficient to throw up a sand bar around a harbor, certain of the lake ports being more susceptible to this annoyance than others. Fairport harbor among others is apt to be found amiss immediately after a storm."

The breakwaters of the up-to-date style are planned for Ashtabula, Conneaut and Fairport. A report will also be submitted at an early date for adopting the same thing at Lorain and probably, on a smaller scale, at Huron. Sandusky is also getting a portion of the improvements. The outer bar is being treated much after the methods pursued at Galveston, Tex. A stone jetty extends 1,500 feet out into the lake and will be extended until the distance is a full half mile. This channel will be lighted by two lights and work on the construction of the lighthouses has already commenced.

REVENUE NAVAL SERVICE.

An important decision, in which the interior department for the first time declares a revenue cutter to have been part of the United States Navy, has been made by Assistant Secretary of the Interior Webster Davis, in the case of William F. Rogers, lieutenant United States revenue cutter Forward, a Mexican war claim. The decision overrules the action of the pension bureau under the last administration and affects a number of claims.

Rogers was pensioned in 1887 for service from June 30, 1846, to April 30, 1847, his vessel having been in active co-operation with the navy, by order of the President, in the Mexican war. It necessarily follows, the assistant secretary concludes, that the pensioner had title to pension un-

der the act of January 29, 1887, having actually served more than sixty days with the United States navy in Mexico, he not being barred by the acts proviso. Rogers' name will be restored to the roles and he will be paid the accrued pension.

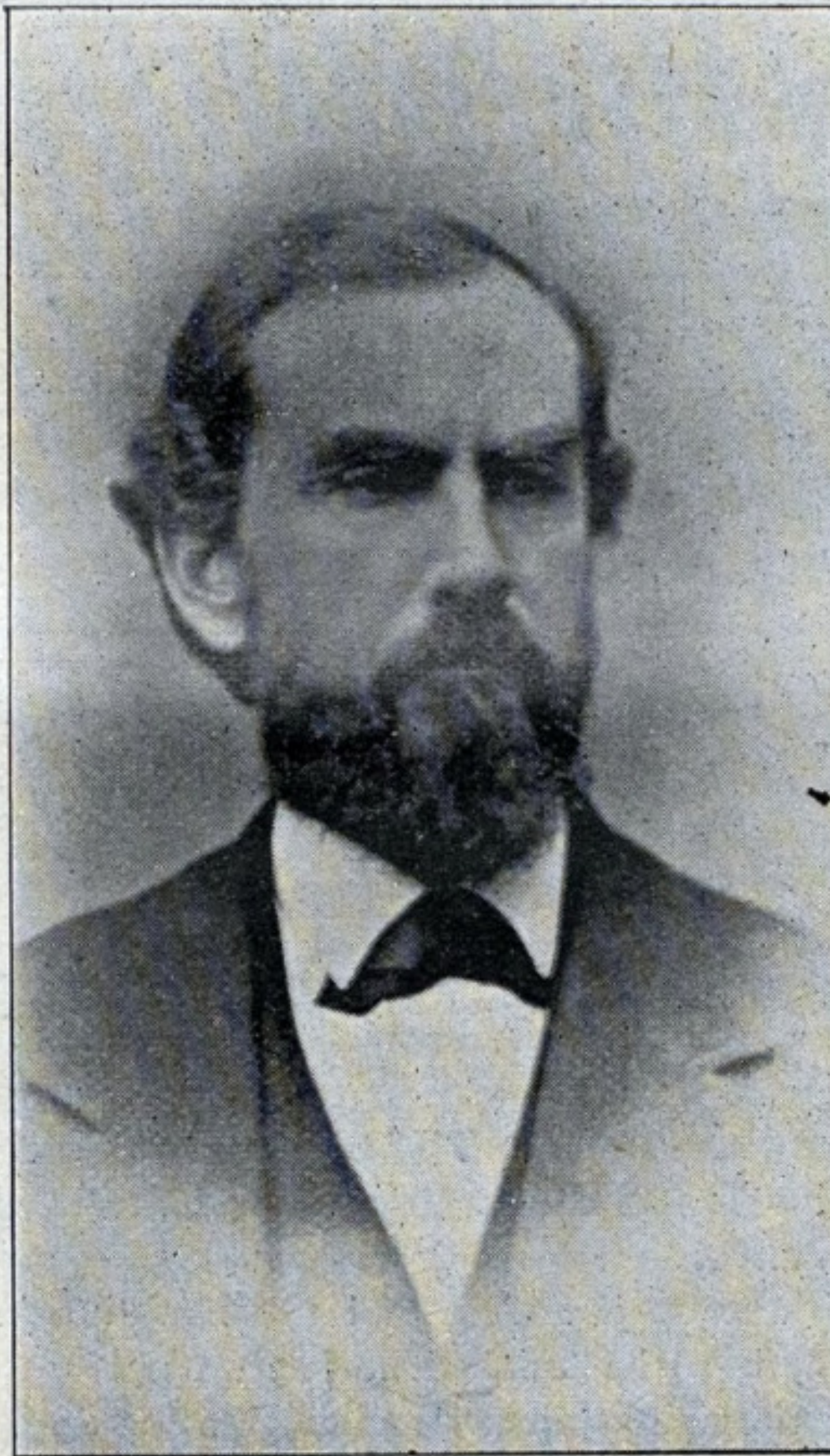
OBITUARY.

George C. Finney, the well known ship chandler, died Thursday evening, August 19th. His sudden death removes from Chicago one of its old settlers and its pioneer ship-chandler.

No man's name was better known and none more esteemed by that great army of men interested in Chicago's lake activities. He will be remembered with respect and warm regard, not only by his associates, but by hundreds of sailors who were his friends or who have cause to remember his benefactions.

A simple, direct, honest, and straightforward man, he held close relations with his employes and all those with whom he had business dealings. No man was bound up more with the development of the enormous industry of the great lakes or better acquainted with the history of the industry than he.

Mr. Finney's death was not foreshadowed by ill-health. He had been at his farm at Ross, Ind., and was on his way to the station returning to his home when he was seized with paralysis or some similar malady and died within an hour.



(THE LATE) CAPT. GEORGE C. FINNEY.

He was born in Henderson, Jefferson county, N. Y., in 1829, and came of a fine family of Congregationalists and abolitionists. He was raised on a farm, and began his life of independence as a clerk at Oswego, N. Y. In 1855 he went into business as a ship chandler in Oswego under the firm name of Finney & Lyons. In 1863 the firm removed to Chicago and opened business on South Water street. The firm has altered its name several times, having been known as Finney Bros., Finney & Channon, and last as George C. Finney & Co., the junior member of the firm being Captain Harry Perkins Finney, the eldest son of the decedent. The present location of the house is No. 4 Market street. For years Mr. Finney was an extensive vessel owner, his fleet being in the grain trade. He was one of the original members of the board of trade, and for many years had been a high-degree Mason.

In 1865 he was married to Sarah Perkins of Oswego, who now mourns him at her home. Six children were born to them, two only of whom are now living, Capt Harry Finney and George Minot Finney.

The funeral was held Sunday afternoon at two o'clock at No. 631 Cleveland avenue, the deceased's late residence, and the burial took place at Graceland Cemetery. The pall-bearers were Captains Calvin Carr, James S. Dunham, William Keith, James Mowatt, John Murphy and John Cairns. There was a very large attendance of marine men and other old friends of the deceased.

A SOUTHERN OUTLET.

Baltimore is rapidly establishing its claim to supremacy as the chief grain exporting port of the country. On Tuesday last, upwards of 900,000 bushels of wheat and flour were shipped from the Atlantic ports, of which 500,000 bushels went from Baltimore alone. The week before over 1,500,000 bushels was loaded at that port and European steamships are entering the harbor with increasing frequency. So much grain is expected to meet the foreign demand that it is feared the Baltimore elevators may not be able to handle it all. On Wednesday last there were twenty-one steamers loading in Baltimore and many more have been chartered.

Although Baltimore is sometimes considered a Southern city, it is unnecessary to say that this wheat comes almost entirely from the West. Of 256,577 bushels received on Wednesday, a total of 222,715 bushels was Western wheat. The Pennsylvania and Baltimore and Ohio Railway systems profit largely by this state of affairs and are taxed to their utmost capacity. It is expected that this great movement of wheat to Baltimore will continue through September.

While the trunk lines leading to New York are also very busy, it is quite evident that New York is fast losing its supremacy as a grain-exporting port. Whether its facilities are not as good as Baltimore, or whether its commercial policy is not as liberal, the results are the same, and are perfectly well understood by New Yorkers. Grain ought to go via the Hudson and the most practicable method of proving this route is by the enlargement of the Erie Canal, for which a Federal appropriation will be necessary, since the taxpayers of New York State have raised all the money for canal improvement that they can be expected to provide. With an all-water route to New York, and the resulting low and stable rates of transportation, Buffalo would be a gainer as well as New York. Plenty of work would be left for the elevators, as no one supposes the great trunk lines will go out of the grain-carrying business entirely. By diverting a large percentage of the grain shipments bound for Baltimore and other Southern ports, there will be plenty for both the railways and the enlarged canal. If something of this kind be not done, Baltimore will continue to be a gainer at the expense of New York, Buffalo as well.

LAKE FREIGHTS.

Grain charters out of Chicago are breaking all records and 1½ cents on corn is being paid to anything and everything that comes along.

Ore freights are inclined to go up and the Escanaba rate has improved 5 cents, but Duluth shipments are light, mostly contract ore being sent forward.

Nothing can be said this week relative to coal, either anthracite or bituminous, as the miners' strike has completely paralyzed the trade. Operators of mines give the workmen another week to determine whether they want to mine coal or not; otherwise labor will be engaged from other sources and the regular coal miners are to be left out entirely.

Lumber freights by lake are showing a tendency toward greater strength than they have had this season. The first indication of this is a rise in the Chicago freight within the past two days of 10 cents, and 12 shillings is now the prevailing price in charters from Duluth to Chicago. The Buffalo and Tonawanda rate still sticks to \$1.40, but it is only a matter of a short time, it is considered, when that, too, will go to the 12 shilling mark. The heavy movement of lumber will begin after the 1st of September, when the rush in wheat shipments will begin and the natural tendency of the lake freight market will be upward.

QUITE RIGHT.

Some time ago we remarked that "foreigners who can not find employment in their own country will continue to make up a majority of the crews of American steamships as well as war vessels." The San Francisco Commercial News takes exception to this with the statement that the majority of blue jackets on American war vessels are Americans and the percentage is increasing yearly. Yes, but that does not alter the fact that the majority of them were foreigners until they were naturalized, and it is owing to a recent act of congress that so many of them have become Americans. Genuine American seamen are, as we remarked, becoming unfortunately very scarce, and there is no provision in regard to the possible naturalization of foreigners sailing on American merchant vessels as there is on American warships, through length of service under the flag.—Marine Journal.

H. C. BURRELL,

Marine Reporter.

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you white and deal
with you

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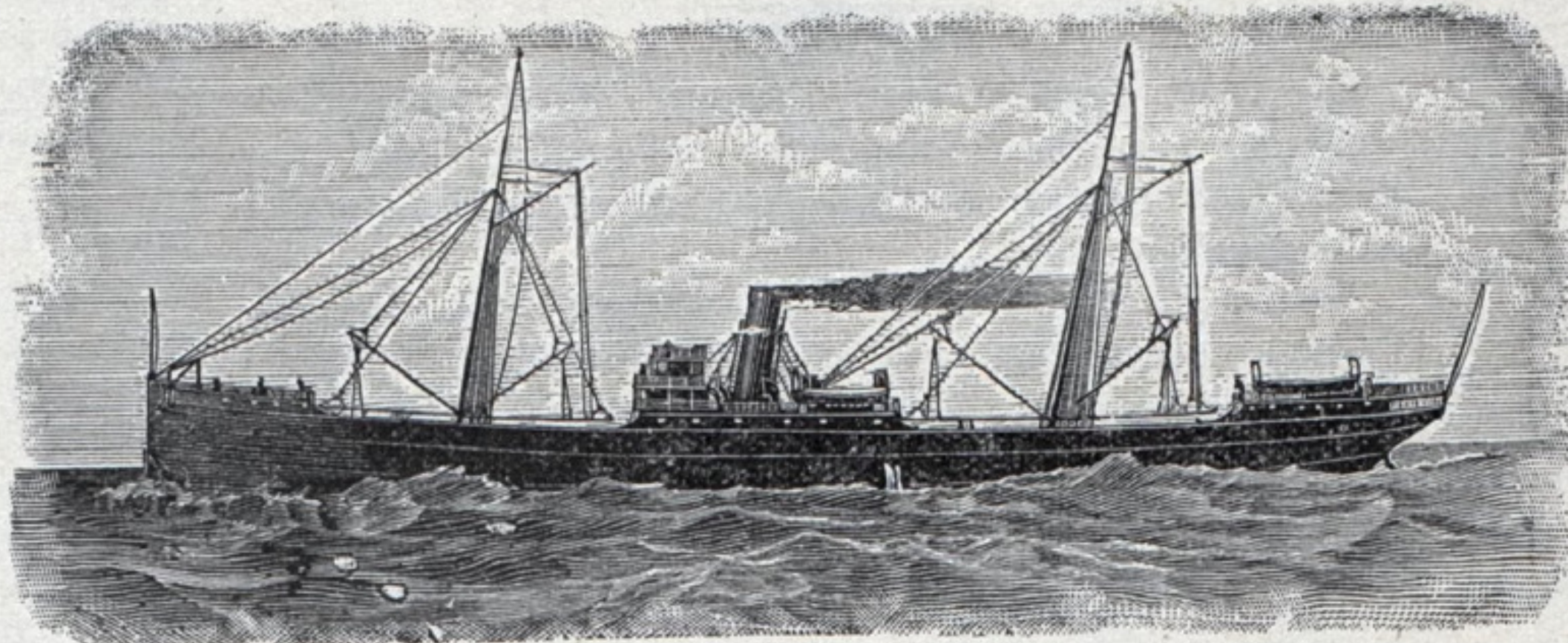
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CHICAGO, ILL.**THE JAPANESE NAVY.**

In discussing the probable annexation of the Hawaiian Islands by the United States, one of the London newspapers recently made the assertion that Japan's navy was greatly superior to ours.

Both powers have been making important additions to their fleets in the last two or three years, and perhaps the English editor's opinion was based upon the United States Navy as it was in 1885, as compared with the Japanese Navy in 1895.

Japan's armored vessels ready or nearly ready for service are two battleships, the Yashima and the Juji, nearly completed in England; battleship, the Chinyen, captured from China; turreted cruisers, the Itsukushima, the Matsushima, the Hashidate, the Saiyen and the Heiyen; armor corvette the Fuso, and steel belted corvettes, the Hi-Yei, the Kongo and the Riojo.

Among the protected cruisers of the Japanese navy of more than 2,000 tons displacement are the Yoshino, the Naniwa, the Takachiho, the Suma, the Itsukushima, the Chiyoda, the Heiyen, the Akashi and the Izumi. Smaller craft, having a displacement between 1,000 and 2,000 tons, are the Takao, the Yayeyama, the Tsukushi, the Katsuragi, the Mussashi and the Yamato.

Two battleship contracts have recently been let by Japan—one for a 14,850-ton ship to the Thames Iron Works, England, and one for an 11,000-ton ship to Messrs. Thompson, Glasgow. Also two cruisers like the Yoshino have been begun in this country. It will be at least two years before these vessels will be ready for service. The 11,000-ton ship, it is said, will be a reproduction of the British battleship Jupiter.

The other battleship building on the Thames, is to have a displacement of 14,850 tons, a length of 438 feet overall and 400 feet between perpendiculars, a beam of 75 feet 6 inches and a draught of 27 feet 3 inches. She will have a continuous water line belt of armor 9 inches thick and 8 feet 2 inches deep, tapering to a thickness of 4 inches

at the bow and stern. A protected deck covers her under water body, having a thickness of 3 inches on the flat and 5 inches on the slopes. The barrette and the transverse armor will be 14 inches thick. Her battery will contain four 12-inch breech loading guns and eight 6-inch rapid firers, with 20 12-pounders and 12 47-millimeter machine guns. She is to be finished in June, 1899.

Taking the ships Japan has available for immediate service, it will be seen that her navy is inferior to ours.

Against one old-fashioned and two modern battleships—the Chinyen, the Yashima and the Juji—the United States could bring four first-class battleships—the Indiana, the Massachusetts, the Oregon and the Iowa.

The second class battleships, the Maine and the Texas, and the powerful coast defenders, the Puritan, the Terror, the Maintonomoh, the Monterey, the Amphitrite and the Monaddock, and the armored cruisers, the New York and the Brooklyn, would sink the poorly armored craft of Japan's navy with little or no risk to themselves.

In like manner the Olympia, the Baltimore, the Philadelphia, the Chicago, the San Francisco, the Newark, the Charleston, the Columbia, the Minneapolis, the Cincinnati, the Raleigh, the Boston and the Atlanta would far outclass the Japanese vessels of the cruiser type.

For the remaining smaller vessels of the Japanese navy we would have the Detroit, Marblehead, the Montgomery, the Yorktown, the Bennington, the Concord, the Castine, the Machias, three gunboats of the Helena class and five of the Annapolis type.

ANOTHER PROJECTED RAILWAY.

The proposed railroad between Duluth and Winnipeg would add materially to the commerce of the great lakes. The new line was conceived by Premier Greenway of Manitoba. The effort now being made to divert the grain trade of Manitoba and the other western provinces to the lakes via Duluth promises to become a national issue in Canada.

The antagonists of Greenway are now endeavoring to

show the impracticability of his scheme, and incidentally condemning him for fostering other projects which were not beneficial to the Canadians.

The projected road would be 350 miles in length, only sixty miles of which would be in Canadian territory. Its promoters promise a ten per cent per 100 pound rate on wheat if given \$1,000,000 by Manitoba. Greenway's opponents are inquiring how the road could be forced to keep its promise, it being virtually a foreign road. The railroad would divert all the grain raised in the Canadian northwest to the head of Lake Superior, and it would go abroad via New York. The Canadian Pacific Co., which would be a heavy loser, is fighting the project.

NOTES.

A dispatch from Seattle states that the North American Transportation Company has awarded a contract for the building of two steamships, each of 2,000 tons, to the Cramps, of Philadelphia.

The Union Iron Works of San Francisco, has accepted the Navy Department's terms for the diagonal armor for the bulkheads for the battleship Wisconsin, now under construction at their shipyards.

Relative to the coal miners strike, no two mines can be worked alike. It is ridiculous for miners to bring prices on an equal basis. There are mines and mines, some may be worked easier than others, besides labor-saving machinery cuts quite a figure these days.

Gen. J. H. Kidd, of Ionia, Mich., has accepted the position of secretary of "the board of engineers for deep waterways from the great lakes to the Atlantic seaboard." His appointment took effect August 7. The other members of the board are Maj. C. W. Raymond, corps of United States engineers; Messrs. Noble, of Chicago, and Wisner, of Detroit. The board may establish permanent headquarters in Detroit.

It is reported from Washington that Naval Constructor Hichborn, chief of the Bureau of Construction and Repair, will be reappointed by Secretary Long upon the expiration of his present term next month. In his decision to

retain Commodore Hichborn, the Secretary of the Navy followed the good judgment of two of his predecessors both of which never had cause for regretting their choice to fill this important position.

The proposals for furnishing gun forgings were opened at the Navy Department, Washington, D. C., on August 14th. There were only two bids, the Midvale Steel Co., of Nicetown, Pa., and the Bethlehem Iron Works. Their bids respectively were as follows in each case the bid of the Bethlehem company following that of the Nicetown company: Six sets of six-inch forgings, 26 1-2c per pound, 26c per pound; 25 sets of five-inch armor, 26 1-2c, 26c; 15 sets of four-inch armor, 25 1-2c, 26c.

The Marine Record, of Cleveland, O., complains against the immigration officers interfering with alien crews on Lake vessels. Our contemporary says that the troublesome officials should be made to make a hole in the drink," which we take to be a modest way of suggesting murder by drowning. Captain Swainson, we uncover and humbly beg that you will accept the medal for anarchy conferred upon our unworthy person by our admiring contemporaries.—Coast Seamen's Journal, San Francisco. And we mean it.—(Ed.)

The Newport News Shipbuilding and Dry Dock Company is making extensive additions to its already large plant at Newport News, Va. One of the large additions under way is the erection of an extension to the machine shop, which will be 100 feet wide and 200 feet long. This building will be used for the finishing and erecting of marine engines and other large machinery used in connection with the steel vessels which this company has under way. The central portion of the building will be 50 feet high, and will be supplied with an electric traveling crane capable of lifting and carrying a load of 50 tons. On either side of this central space will be located a gallery arranged for small machines and fitting tools. The building is to have a steel frame work throughout, and the roof is to be covered with corrugated iron. The Berlin Iron Bridge Company, of East Berlin Conn., have the contract for furnishing and erecting the steel work of the building.

Acting Secretary Roosevelt on Monday appointed a board, consisting of Commodore F. M. Bunce, Commander F. E. Chadwick and Assistant Naval Constructor R. B. Dashiell, to investigate the condition of the docks of the country. They are under instructions to submit a report before September 15. It is considered probable that the board will make a recommendation in favor of floating docks, one to be built at New York, possibly another at Boston, and one at Newport News, Va. At least a

majority of the board are opposed to the building of any more timber docks. Its decision rests, therefore, between stone, concrete and floating docks. Floating docks are favored on account of cheapness, the ease with which they accommodate a disabled vessel, and their availability for employment on the Atlantic Coast. The cost of a floating dock would probably not exceed over \$500,000. It would be built of square, box-like structures, with sides of steel, and when these boxes become foul they can be placed in other sections and cleaned. A stone dock may be recommended for the Gulf coast.

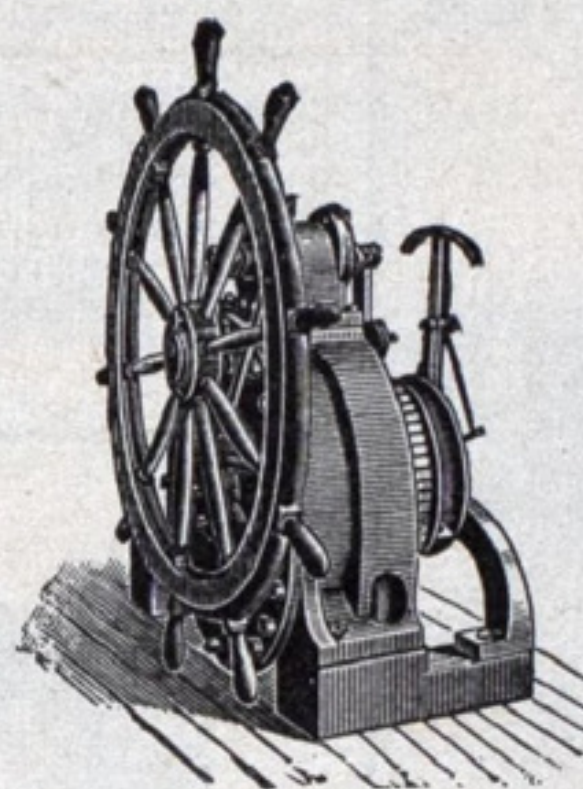
The Navy Department has made an announcement that naval militia organizations to which Navy ships are loaned must keep these ships in good repair, otherwise the department will be compelled to revoke the permission for the use of ships and again return them to its service. The announcement is the result of a report received from Naval Constructor W. J. Baxter, who examined the monitor Comanche, loaned to the California naval militia, while the ship was in dry dock last month. Naval Constructor Baxter states that the floors and frame within the machinery space of the vessel, which were found seriously crowded when the vessel was inspected two years ago, could not be examined owing to the presence of a large amount of bilge water having a bad odor. The Department has notified the naval battalions of New Jersey, North Carolina and Georgia, who have called attention to needed repairs on the Ajax, Nantucket and Passaic, respectively, that they will be required to take care of these vessels at their own expense.

The Canadian Manufacturer, Toronto, Canada, published in its issue of August 6, The 1897 Canadian Tariff, United States Tariff, British Tariff, British Merchandise Marks Act, and The Newfoundland Tariff. The publication of these important State papers, all within one cover, conveniently arranged as a ready reference hand book for office use, is an exhibition of journalistic enterprise that has never before been attempted, the importance of which cannot but be fully appreciated by all who are interested in the manufacturing, industrial and financial affairs not only of the countries indicated, but of the entire commercial world. In this connection "there is much credit due to the Canadian Manufacturer, nor do we doubt but that the issue of August 6 will be found on file in business houses throughout the great and glorious continent, and that Editor J. J. Cassidy will be spoken of as a timely benefactor to the world commercial, for his perspicuity in the presentation of the tariff lists as well as for the well advised circumspection which permitted

him to realize the estimation in which the publication of these tariffs under one cover would be received by the majority of importers and exporters, which, of course, covers the entire shipping community.

The steamship China, of the Pacific Mail Company, sailed from San Francisco this week, carrying the Hawaiian flag. Several of the vessels of this company engaged in trade with China and Japan, are of British build, and of course carry the English flag. Shortly after the passage of the act under which American register was given to the steamships New York and Paris, of the International Line, an effort was made by the Pacific Mail S. S. Co., to secure American registry for their foreign-built ships, but the effort was not successful, for the reason that the Pacific Mail Company was not willing to comply with all the conditions under which registry was given to the New York and Paris. The transfer at this time of the Pacific Mail Company's vessels to the Hawaiian flag is an indication that the company is hopeful that annexation will be accomplished at the coming session of Congress, and that by the act of annexation they will secure American registry and the American flag for their foreign-built ships. It is thought that other owners of foreign-built vessels may follow the example of the Pacific Mail Company and place their vessels under the Hawaiian flag with the expectation of speedily securing American registry. "Peace hath her victories no less renowned than war." Witness the way the Indiana has captured Halifax.

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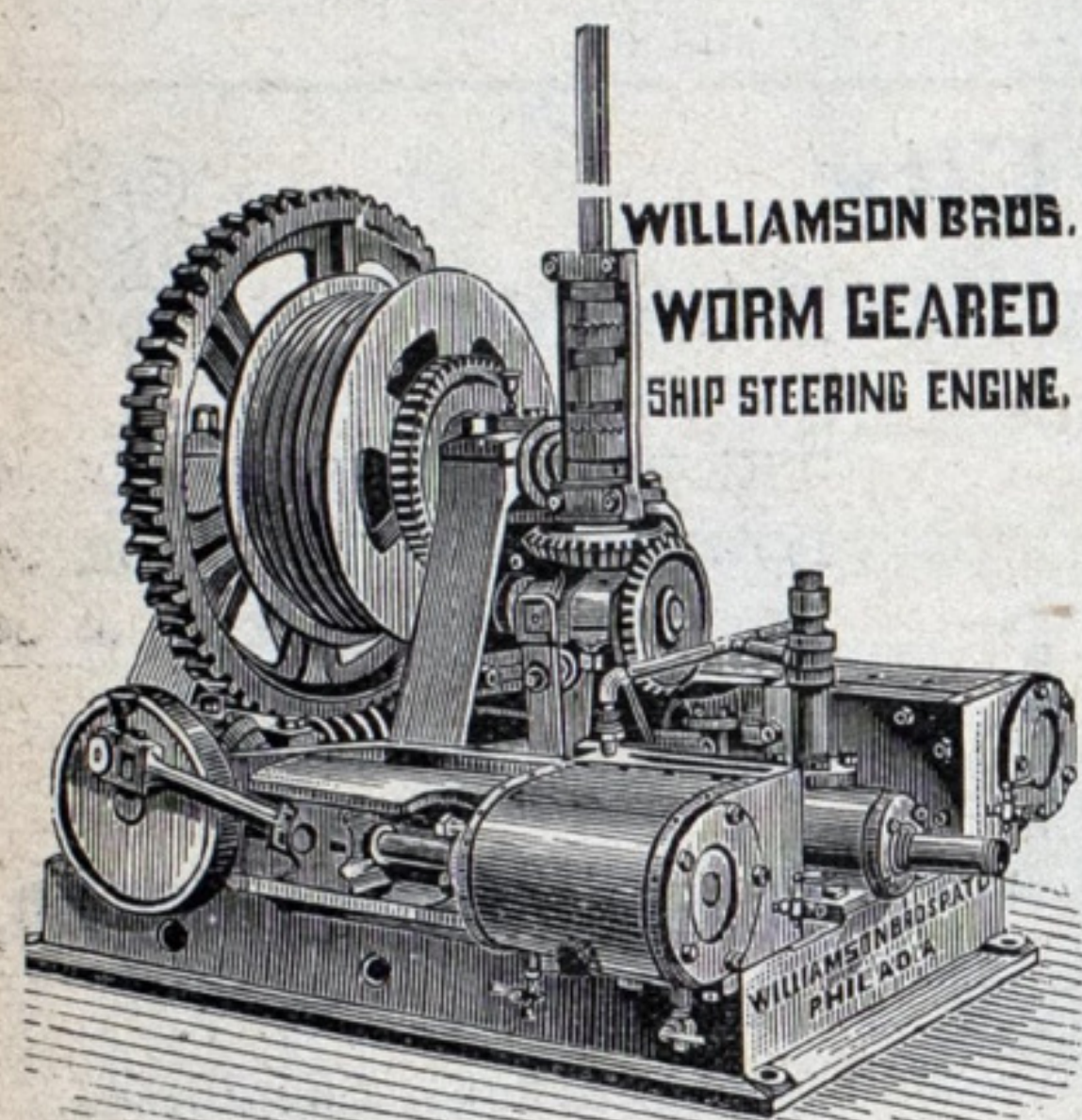
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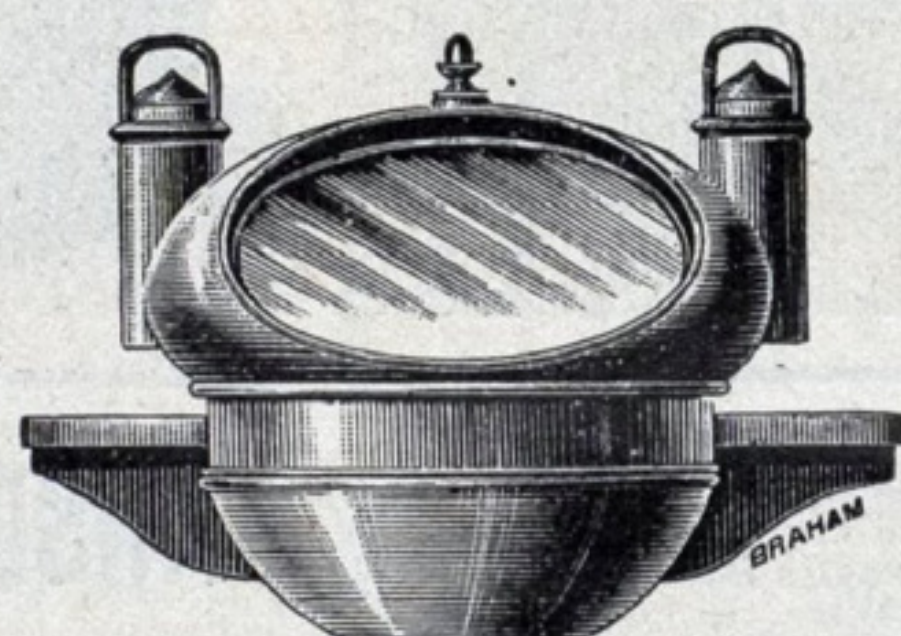
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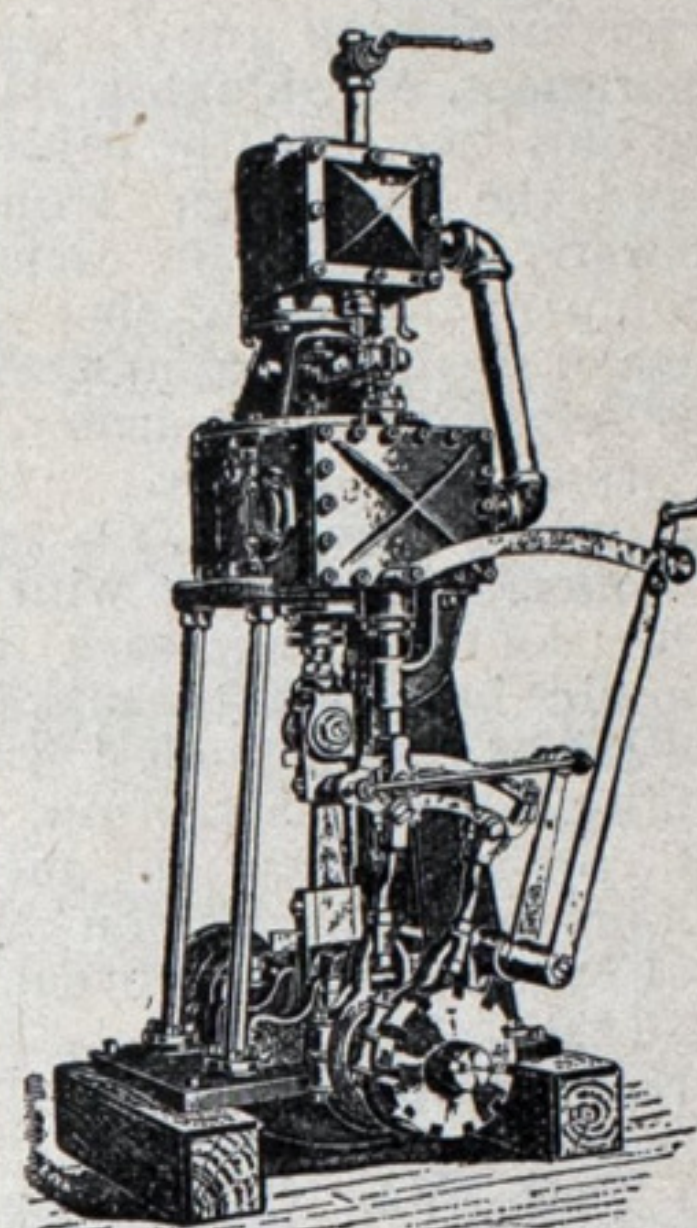
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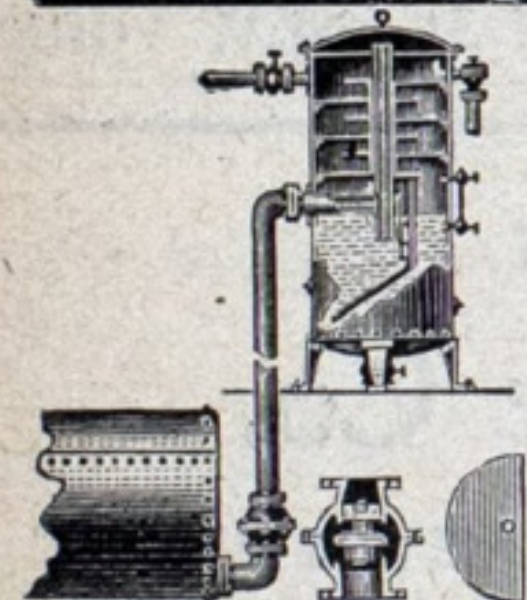
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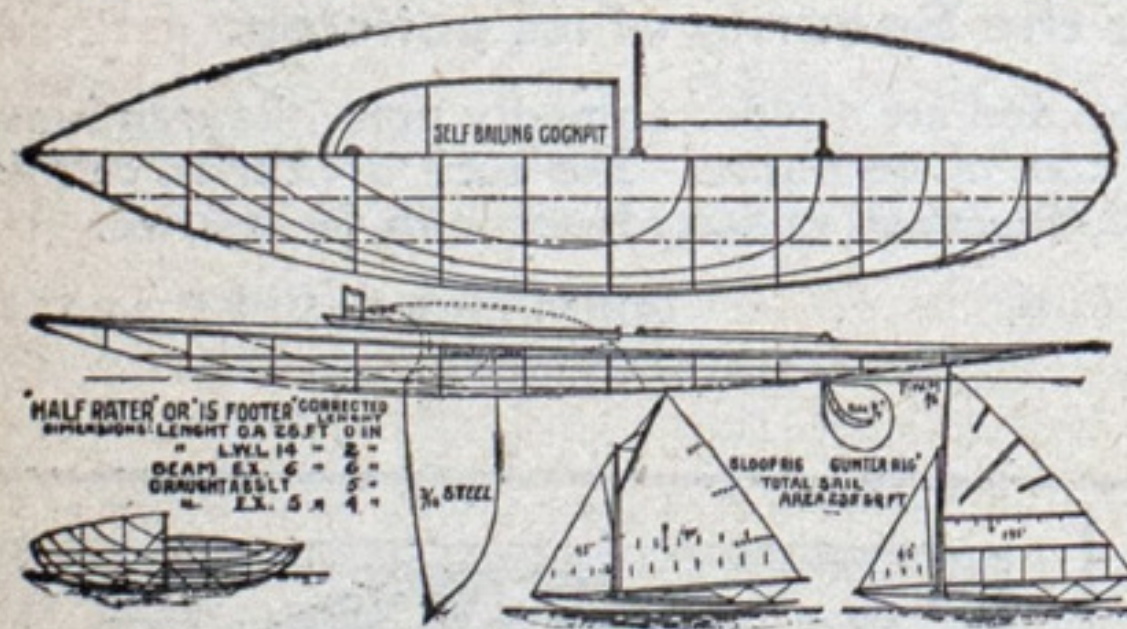
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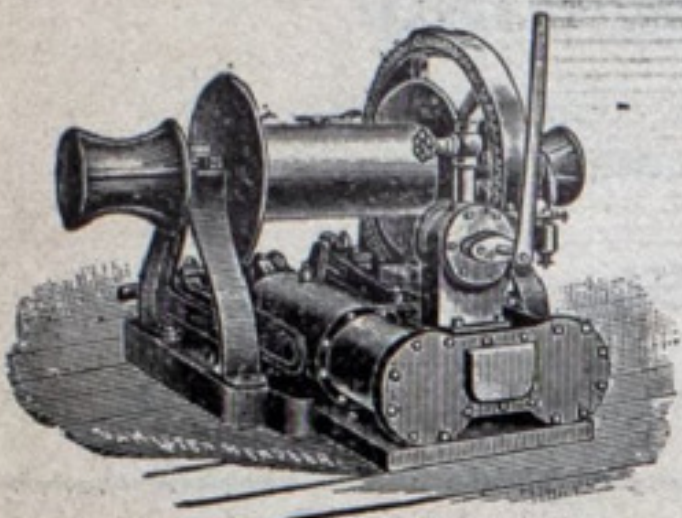
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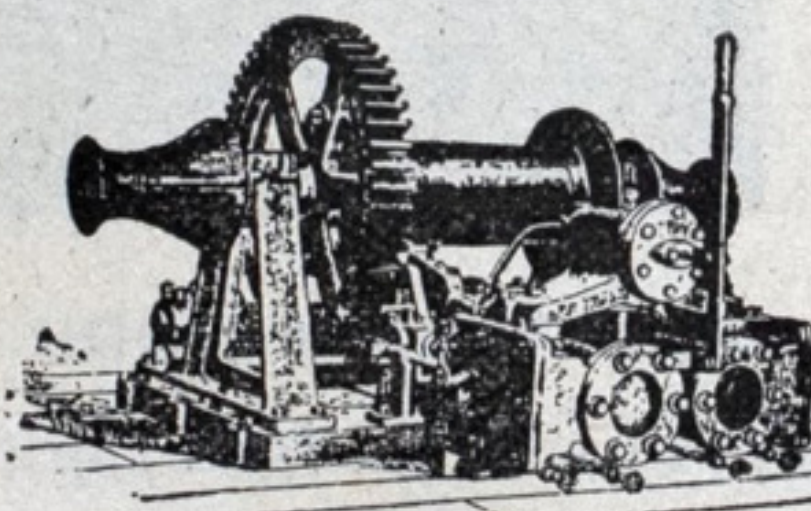
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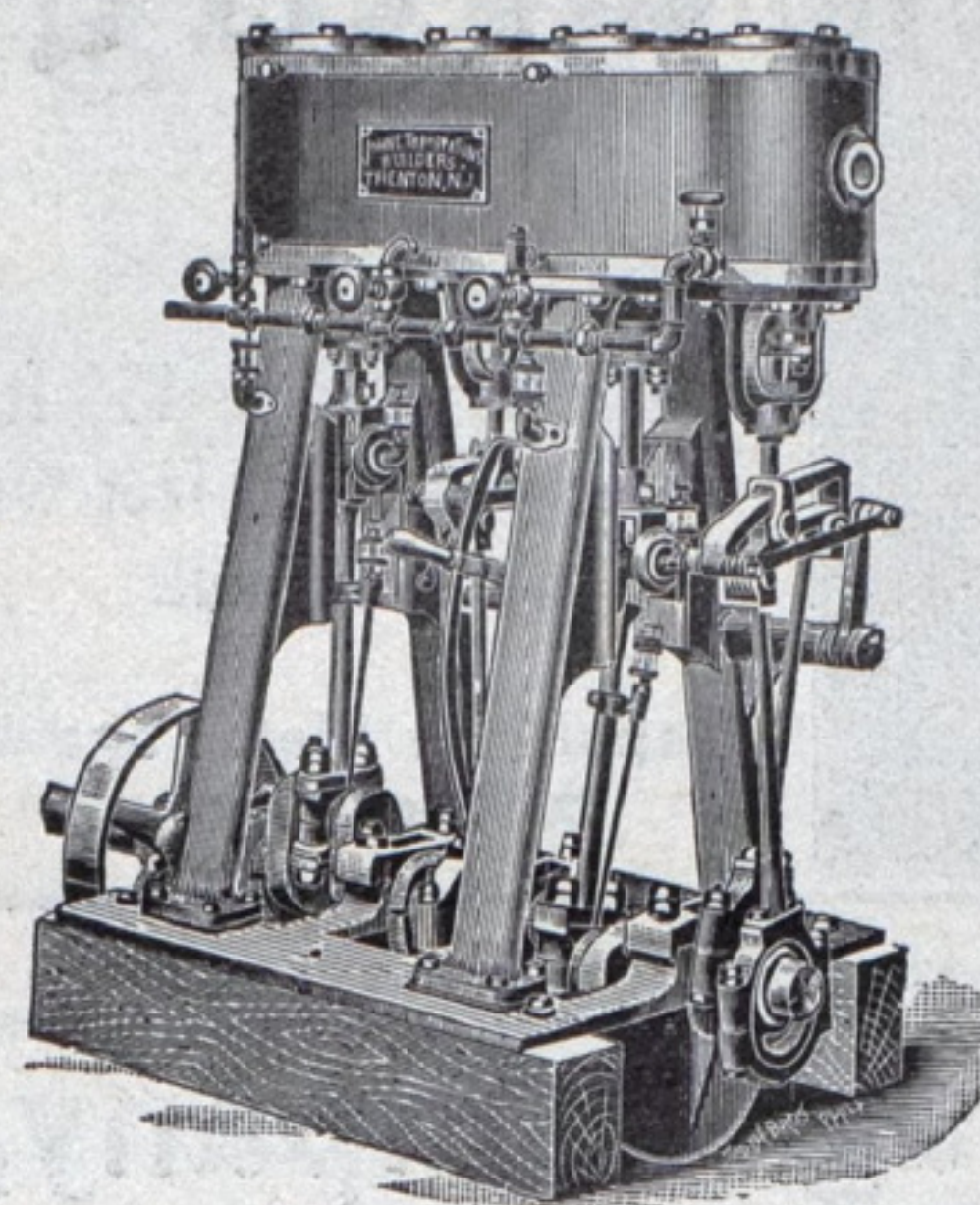
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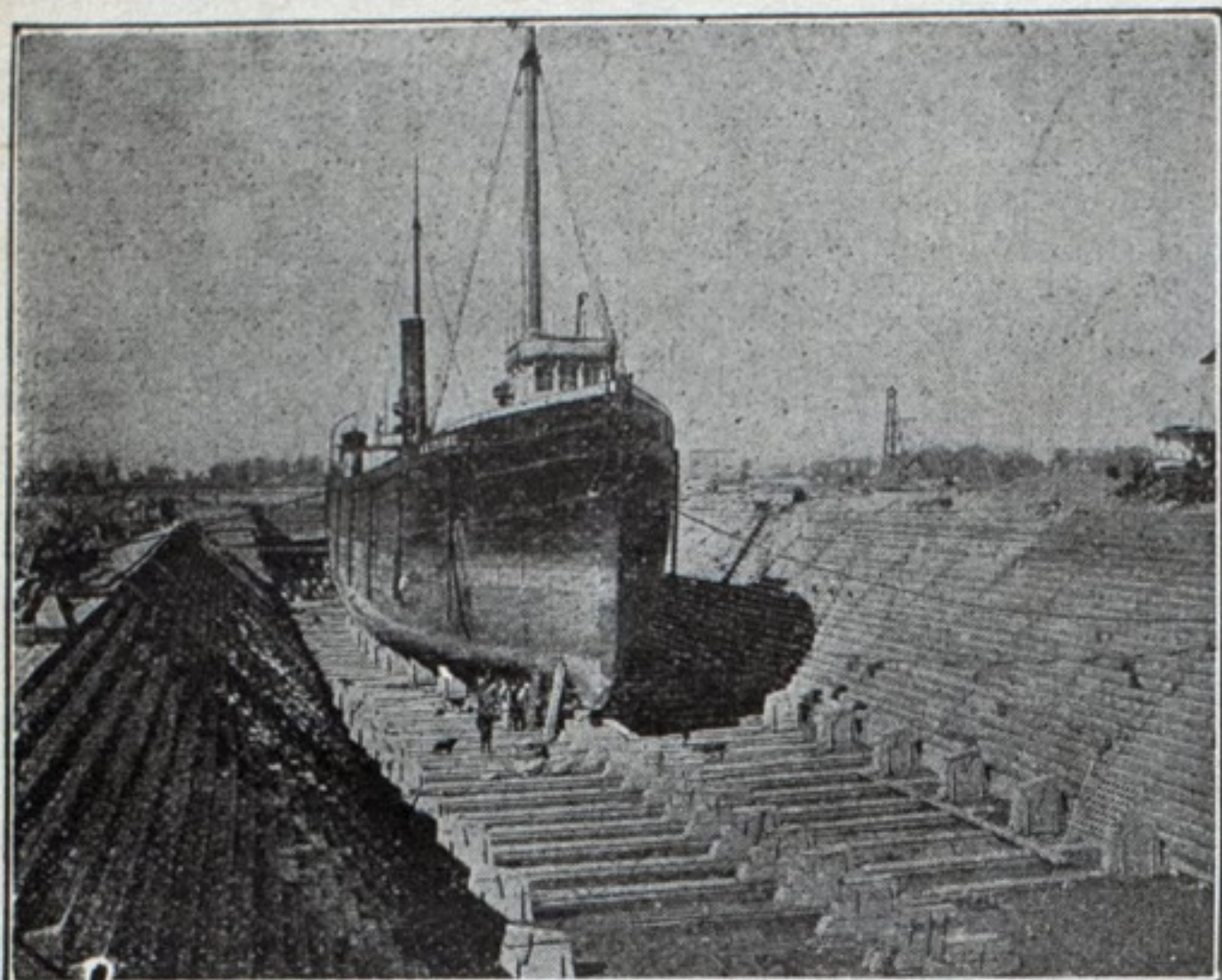
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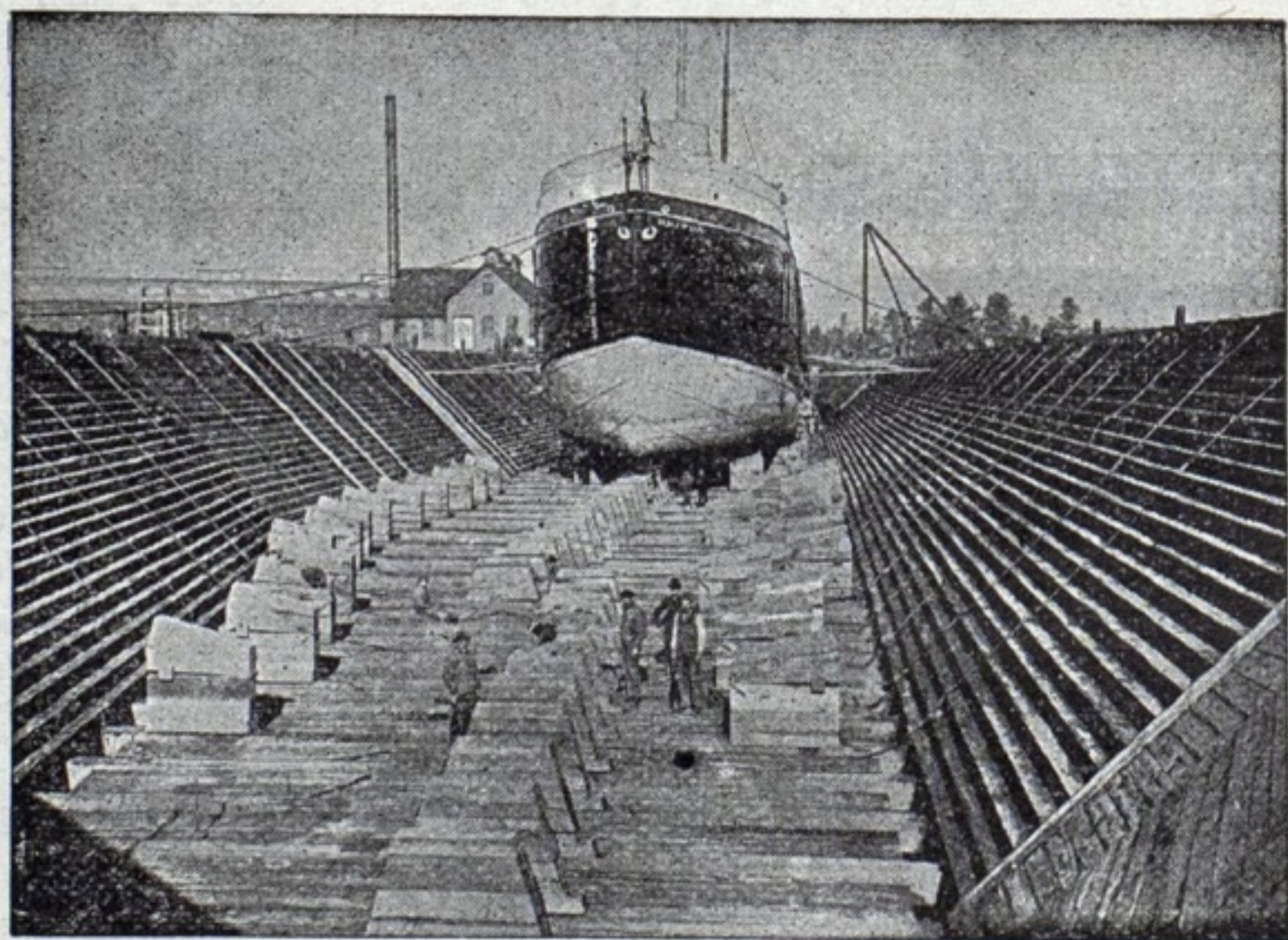
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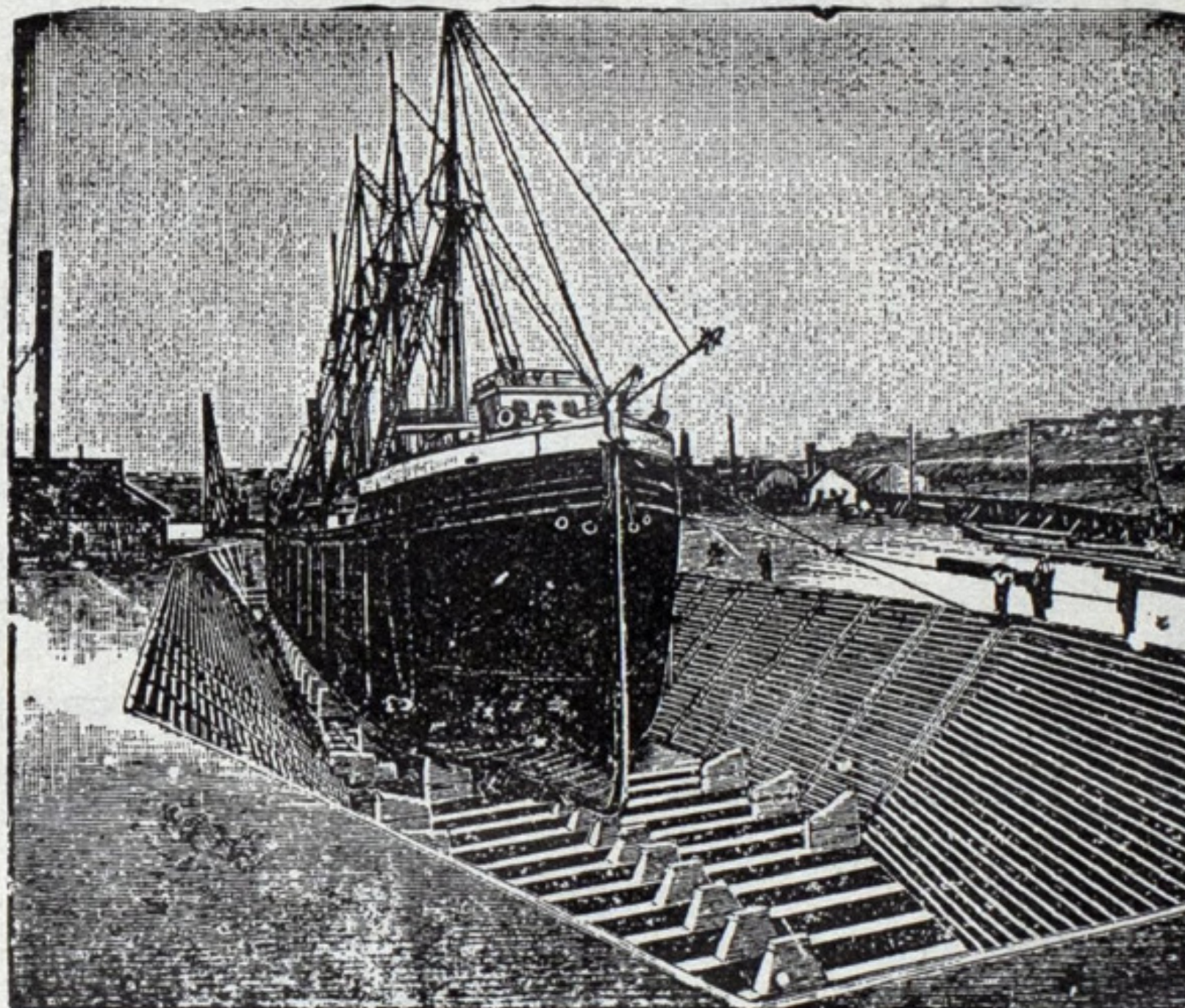
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